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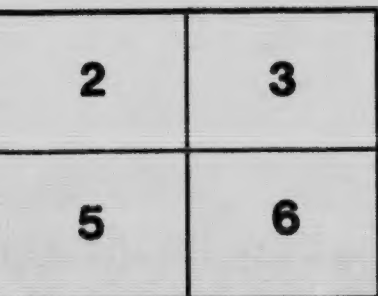
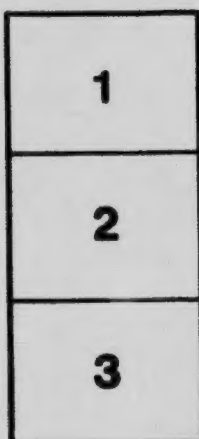
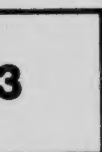
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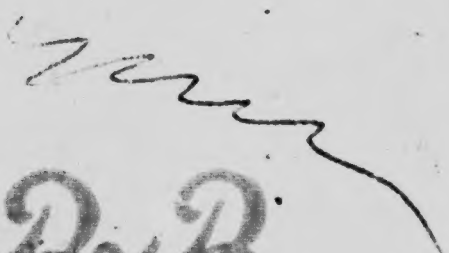
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A HANDBOOK
of
FIRST AID



B & B

BAUER & BLACK

CHICAGO NEW YORK TORONTO

RB140, 760

A Handbook of
FIRST AID

*In ACCIDENTS
EMERGENCIES
POISONING
SUNSTROKE, Etc.*

Household Edition

By **DR. GUSTAVUS M. BLECH**

Chief Surgeon Lincoln Hospital; Member
Consulting Staff Cook County Hospital;
Assistant Division Surgeon,
33rd U. S. Infantry (Illinois).
Formerly Director-in-Chief American
Red Cross Field Corps, Illinois Division

***Always call the doctor
Remember First Aid is only first aid***

BAUER & BLACK
CHICAGO and NEW YORK

BAUER & BLACK, Limited
TORONTO, CANADA

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This book is not an advertisement. It is written by a master surgeon who has no connection with Bauer & Black.

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INTRODUCTION

Scarcely a day passes but what some worker is injured in the shop, mine, railroad yard, or even on the street or at home.

In other words, accidents and emergencies endangering human lives are very frequent.

The proper thing to do in all such cases is to call in a physician, but as some time must elapse before he can reach the scene, and as timely and proper aid may be necessary to save life, every man and woman should know enough of the principles of *first-aid* to do the right thing until regular medical assistance can be obtained.

The entire subject of *first-aid* is not difficult. Remember that no one expects a layman to do what is expected of a doctor, nor to know as much about the human body and its functions (workings). But what is expected of men and women is that they know enough to be useful.

Not all persons are fit to render *first-aid*, even though they know from study all about the character of injuries and emergencies, for the man or woman who is likely to get excited or faint at the sight of blood coming from a wound, can do the injured no good.

One must be able to control his own mind by some such thought as: "Here is a man cut by a machine and blood is flowing fast—if this flow is not quickly stopped he may die. Now I must keep cool and stop that flow, for I know what to do."

Or, a man has fallen down the steps and he lies groaning and only half conscious on the ground. A dozen people rush to him, everybody is more or less excited and everybody offers all sorts of advice, most of it foolish. Here the man who understands *first-aid* knows what to do and can step forward, give one command and assume full control. Usually everybody else will realize that the firm but quiet tone means that the right man has come and they will gladly obey him.

Therefore, secure the necessary knowledge. Read the following pages slowly and carefully. We have tried to make the study of *first-aid* as easy as language can make it; we have not burdened the book with scientific things which are not essential.

In conclusion let us remind you that whenever you want to consult this book in a hurry, you will find at the back a complete index and at the front a table of contents, both of which direct you to the page where you will find the necessary information.

For example: A man has swallowed carbolic acid by mistake. You have forgotten what to do. Naturally this comes under the class of poisoning. You will find the page by looking up "poisoning" in the index. Should you look for "carbolic acid" you will find the page listed under that name, too.

For general reading on special subjects use the table of contents.

TABLE OF CONTENTS

Index at back of book

Introduction	3
CHAPTER I	
The Human Body	5
CHAPTER II	
Cleanliness	10
CHAPTER III	
Wounds	12
CHAPTER IV	
Hemorrhage	13
CHAPTER V	
Shock (Collapse)	21
CHAPTER VI	
Fainting (Syncope)	22
CHAPTER VII	
Burns	23
CHAPTER VIII	
Dislocations	24
CHAPTER IX	
Fractures or Broken Bones	26
CHAPTER X	
Sprains	34
CHAPTER XI	
Bruises	34
CHAPTER XII	
Electric Shock—Lightning	35
CHAPTER XIII	
Drowning	38
CHAPTER XIV	
Poisoning	41
CHAPTER XV	
Sunstroke—Heatstroke	54
CHAPTER XVI	
Bandaging	56
CHAPTER XVII	
Artificial Respiration	61
CHAPTER XVIII	
Carrying Patients	63
CHAPTER XIX	
Foreign Bodies	71

CHAPTER 1

THE HUMAN BODY

No one will venture to meddle with a good watch without knowing its mechanism, because one is afraid the watch will be completely ruined. So one sends the watch to an expert who knows how to repair and adjust the little wheels, springs and fastenings. It is strange, therefore, that when a man's body is out of gear or injured, people who know next to nothing about it are prepared to advise the use of all sorts of medicines, salves, lotions, or dressings, without realizing where and what the trouble is and whether life may not be endangered by harmful treatment. Even the so-called harmless remedies may prove dangerous because in reality nothing is being done for the sick body and valuable time is allowed to pass so that often proper help may come too late.

The first thing is to know something of the body. Of course everybody knows that the human body is a very complicated affair, and doctors themselves admit that the study of all the organs is one of the most difficult things they have to learn. Fortunately a man trained for *first-aid* does not have to know all these details.

Glance at yourself in the mirror. You see first of all your face and the front part of your head, following downward comes the neck, then the chest, the abdomen, the lower limbs—the legs. Glancing again at the chest you notice your shoulders and arms. By placing a mirror at your back you can see how your head and neck look on that side. Below that the separation of chest and abdomen is impossible—the entire back looking like a curved surface. The entire body is covered by the *skin*.

Look closely at the skin and you will see fine hairs everywhere. Hair in large quantities covers the top of the head, the upper and lower eyelids (lashes), under the arms, etc.

Look at your face again. There you have the eyes, the ears, the nose and the mouth. Everybody knows without special instructions what these organs are for.

All this is but a brief enumeration of what you already know.

The Muscles. Let us assume now that the skin is stripped off. The body will show "fleshy" parts. These fleshy parts, which run in groups and give the "form" of the body are called muscles. It is not necessary that you know their names, nor their exact construction. It is sufficient to know that their principal purpose is to produce motion. When you walk, turn, lift, sit down, work, etc., it is done by means of the muscles.

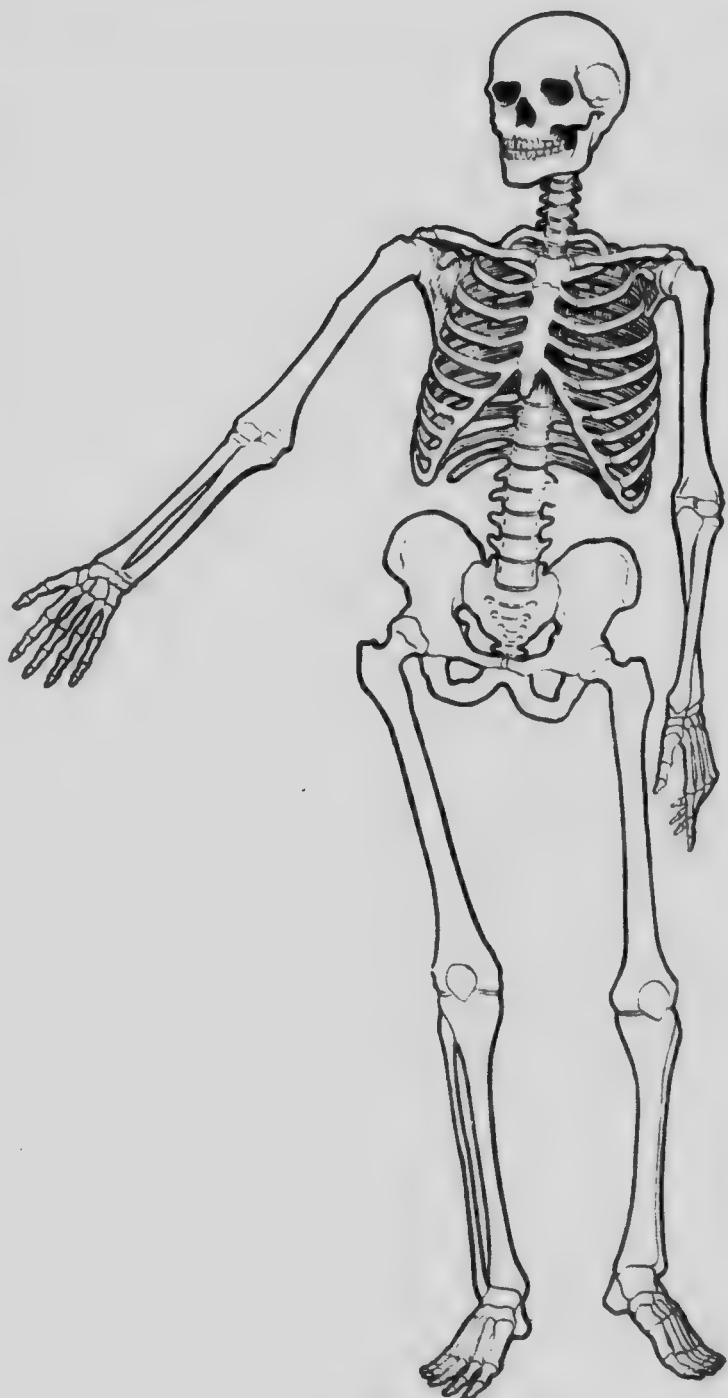
The muscles are attached to bones at their ends. These ends are harder than the rest of the muscle and look like cords. They are the tendons.

The Bones. The bones of the body are of special interest to us and it is necessary that you know the principal ones.

Look at the plate. You can see the bones of the human body just as they are in nature, with everything else—muscles, skin, fat, etc., removed. All the bones of the body form the *skeleton*.

Look first at the bones of the head—the skull. You can see the jaws and the hollows for the eyes. You notice that the head proper seems to be one round bone, like an irregular ball. In reality the skull is composed of several bones, but they are practically grown together into one. This is necessary because inside the skull is the *brain*, which is soft and delicate.

An injury to the brain is a very serious matter. The brain is the principal battery, giving life. We not only think, see, and hear and feel, but practically all our bodily functions are controlled by the brain. If the brain is injured or diseased the sufferer may lose speech, consciousness, ability to see, hear, or walk—all depending upon what part is affected. You can readily understand, that such an important and delicate organ needs special protection.



The Skeleton

When you send a delicate piece of glassware by express, you put around it sawdust or excelsior and make sure that the shipping box is very strong to resist jarring. That is just exactly the way the brain is protected. The outside "box" is very strong (because round and solid) and between it and the brain is a fluid and a delicate skin which reduce the effect of jarring.

The skull rests on the "backbone." You can notice that the long backbone is not solid, but composed of a number of small bones, which are not joined very tightly, as between them is a disk of softer material than bone—called cartilage. This backbone is called the *spinal column*. It is hollow throughout and contains a continuation of the brain—the spinal cord. While the spinal cord is not so delicate as the brain itself, it has, like the brain, important functions and therefore needs protection. The fact that the spinal column is not solid does not mean that the protection is poor. The spinal column must be flexible to enable us to stoop, crawl, climb or lean back. It takes lots of force to break any one or more of the bones of the spinal column (called vertebrae)—but when they are broken or dislocated there is, of course, great danger that the cord itself may become injured, in which case the victim becomes paralyzed. We shall say something of this at the end of this section.

Now notice that the upper part of the spinal column has twelve ribs on each side—twenty-four in all. These are not attached firmly, but are movable; and while they look like hoops around a barrel they do not hold the chest solid. In the chest are the lungs and the heart. The lungs take in air and the ribs then expand to allow the chest space to become larger.

In front, the ribs are joined by the breast bone, which is shaped like a short sword. On top of the chest in front are the two collar bones; and at the back, the flat shoulder blades—you can feel them on your own body. They are very often broken.

Below you see the spinal column end in a triangular bone. On each side are flat, thick, irregular

by and to gain use as a of bones, forming together what is known as the *pelvis*, which means a basin. These bones protect the bladder, the lowest part of the bowels and the inner sexual organs. Now look at the large *hip bone*, the *knee-cap*, the two *leg bones* and the many little bones of the foot—and see how similar the arrangement is to the arms. Any one familiar with mechanics can readily see that these bones, where they meet, form *joints*. These joints are very important. The bones being solid, give the body form. The joints afford us the ability to move. If the joint is like a hinge, as is the knee, we can move the corresponding organs, namely thigh and leg, just like a door on hinges—backward and forward. Where the joint is like a ball and socket, as you see at the top of the hip bone—motion is possible in all directions.

The Blood. It is important that you know how the body is nourished. We eat and drink and breathe to give the body fuel—but the agency that sustains us is the *blood*, which takes up from the food and air what is needed to nourish all the parts of the body—even the skin and hair.

The blood is of great importance to us. Place the finger tips of one hand where the “pulse” can be felt. Imagine a sharp knife opening the blood vessel. The blood will come out in great jets. In a very few minutes so much of it will be lost that a man will die.

The loss of blood even from smaller blood vessels may become dangerous if not stopped. To know how to promptly stop a hemorrhage (bleeding), you must know something of the way the blood runs in the body—the so-called circulation. You must look upon the heart as a central pumping station, pumping blood through narrow pipes—the *arteries*—to the body, both to the part below the heart and to the part above it, such as the neck and head. The blood after it has done its duty comes back to the lungs by another set of pipes—the *veins*.

Remember, then, that *arterial blood* flows to all parts of the body in a direction *from* the heart, while

venous blood flows from the body in a direction *towards* the heart. And you know that the heart lies in the left side of your chest. You must never forget this—you will learn later on how to stop hemorrhage from an artery or vein without any difficulty.

The Nerves. There is one thing more you ought to know for the sake of completeness.

How does the brain and spinal cord control our movements? By the *nerves*—these string-like organs looking something like tendons.

The nerves are to the body what wires are to an electric bell. The brain and spinal cord are the batteries. But there is an additional set of wires which “carry messages” back to the brain, too.

Your leg touches a hot or a sharp thing and the nerves send a warning to the brain—you “feel” the burn or the pain.

If the batteries or nerves become destroyed sufferers can either not move or they lose sensation of heat or pain, or both.

CHAPTER II

CLEANLINESS

“Cleanliness is next to godliness” is an old, true saying. In handling injured people, especially when dressing wounds, a special kind of cleanliness, commonly spoken of as surgical cleanliness, is necessary to prevent serious results.

To understand what is meant by “surgical cleanliness” it is necessary that you know something of germs and blood poisoning.

Supposing your finger is inflamed and it is necessary to make a small cut to let out matter (pus) and to give you relief. You will notice that the doctor does not take out a knife from his case and make the little cut without any preparation. No, first he boils the knife in water for a few minutes, then he puts alcohol or tincture of iodine over your finger and then only does he make the cut. Why?

That knife, although it looks clean and polished may have deadly germs on it. We cannot see germs except with a good microscope, but we know from actual experience that they are everywhere—on the floor and walls, on the furniture, on your skin and clothing—in short, everywhere.

Now when the doctor boiled his knife for five minutes he knew that he had killed every germ on that instrument. But there are germs on your skin. In cutting with the knife he may push the germs on the skin into the wound or cut. These germs give off a terrible poison and in a day or two you will have chills and high fever—your finger, hand and arm will become terribly swollen and painful, and while you may get well with proper care, your life will be in danger. Indeed, many patients have died from poisoning by germs.

For this reason the physician has painted tincture of iodine over the skin of your finger—to kill the germs on your skin.

Tincture of iodine has that power. All drugs which prevent the development of germs are known as *antiseptics*. *Germicides* are drugs which kill germs.

Before the doctor has taken the clean knife in his hands to make the cut he has washed his hands in some antiseptic solution. All this has the same purpose as the tincture of iodine on your finger. The reason the doctor disinfected his own hands was that if he touches the clean knife with a dirty hand the knife will not be safe to use—in other words, the freshly boiled knife may become contaminated (infected) with germs from the doctor's hand and the boiling is useless.

For the same reason a doctor never puts his instruments on a bare table—first he places a surgically clean towel over it, and then he puts his instruments on the towel. A towel fresh from the laundry is fairly safe. One boiled in water immediately before using is absolutely safe.

From this description you can see the danger of making a simple, perhaps harmless, wound a dangerous one.

Therefore, in treating a wound you must not allow the injured place to be touched by anything that is not clean in a surgical sense.

You must not touch the wound with your own fingers or hand, even though you have just washed them with soap and hot water and they look pretty clean to you. There may be deadly germs on them just the same.

Most injuries occur while men are at work. Naturally the body is not in the cleanest condition. But even if it were clean in the every-day sense, that does not mean that there are no germs on it.

You will now realize that in putting on dressings you must not touch that part of the dressing which will be placed directly over the wound. This is the first law of *first-aid* for wounds (see chapter III).

CHAPTER III

WOUNDS

Whenever the skin has been broken we call such an injury a wound.



Figure 1

Proper method of applying sterile gauze to wound

Wounds may be large and small, deep and shallow, clean and sharp, or ragged and dirty—all depending upon the force and the instrument with which they have been produced.

A man is stabbed with a knife—the wound is just a clean, deep cut. Another has a good deal of flesh torn away by machinery—such a wound is usually ragged.

A physician should be called for all large and deep wounds.

Until he arrives the wound must be protected against blood poisoning (infection).

First of all if there is hemorrhage, treat it as taught in Chapter IV.

Second, paint freely both wound and surrounding skin with Tincture Iodine, 3½%.

Third, take a folded piece of clean gauze, pick it up with the fingers of the right hand and then place that side which you have not touched against the wound. Put a bandage over all. Sometimes cotton must be placed over the gauze dressing before applying the bandage:

Figure 1 shows plainly how a dressing is to be applied properly. The reason for not touching that side of the dressing which you intend to place over the wound has been explained in the chapter on cleanliness.

Do not attempt to wash out wounds with any medicines.

If you see pieces of dirt or cloth in the wound pick them up with a pair of clean fine pinchers or with a piece of gauze. If the patient is prostrated, treat him as taught in the chapter on shock.

CHAPTER IV

HEMORRHAGE

Every time the skin is broken there appears blood. Sometimes a little bit of "oozing" is all that can be seen. This usually happens in wounds which are not

deep, or because no blood vessel has been injured. Just dress the wound with a clean dressing and bandage rather tightly—that is all that will be needed.

But when a blood vessel has been injured, blood escapes in large quantities and unless it is stopped at once so much may escape that the victim will lose his life.

The First Thing to Do is to Stop the Bleeding. Before undertaking to do that, you must at once decide whether the hemorrhage comes from an artery or a vein. This is not difficult.

Blood from an artery comes out in jets and spurts, very similar to the water playing from a fountain, as you see them in public parks; while blood from a vein *wells up*—in other words, there is a flow but no force.

If the hemorrhage comes from an arm or leg, let the patient lie down and raise the arm or leg straight up—you will note that in a *venous hemorrhage* the flow will stop, but not in an *arterial hemorrhage*.

Now the quickest way to stop hemorrhage of any kind is by pressure, say with your thumb, not over the place where the blood comes from—you have already learned not to touch wounds—but a little away from the wound. And now this rule is invariable:

In hemorrhage from an artery, pressure must be made between the wound and the heart—in hemorrhage from a vein, on the side farthest from the heart.

To Illustrate: A man has received a gash on the forearm, three inches above the wrist. For an arterial hemorrhage you will make pressure close to the elbow—that is between the wound and heart; for a venous hemorrhage you will make pressure away from the wound—therefore at the wrist.

Another Example: A piece of tin thrown from a machine cuts a man's neck midway between the jaw and the collar bone.

If blood escapes in jets (arterial hemorrhage) you will press your finger or fingers *below* the wound, so as to check the flow coming from the heart (as you

see again: between wound and heart) while if the blood just wells out—venous hemorrhage—you will press above the wound—away from the heart.

Now it stands to reason that no man can keep up pressure for any great length of time. The fingers and hand of the helper will soon tire out.

The finger is at best only to be used for a very short time until someone can hand you the things necessary to make pressure with something else.

Bleeding From Wounds of the Extremities

If you are in the shop you have in the first-aid box a *tourniquet*, which is a strap and a piece of wood made for that purpose. (See Figure 2).



Figure 2. Tourniquet.

The tourniquet accompanying the Bauer & Black first-aid cabinet consists of a strap of linen and a small round piece of wood, having notches on each end. Take off the strap. You now have in your hands the piece of wood and the strap. Slip one end of the strap into one notch and the other end into the other notch, making a loop. Place the loop over the bleeding limb and slide the wood down to the skin. While holding the strap so it will not come out, give the wood a few twists, just enough to stop the bleeding, then tie the strap over it and fasten around the arm or leg in such a way that the wood cannot untwist.

If you have no tourniquet—you must make one. The materials to make a good one can be found anywhere.

A suspender makes one of the best tourniquets. It is elastic, and therefore the pressure is firm, yet gentle. Of course no more pressure should be used than is needed to control the bleeding.

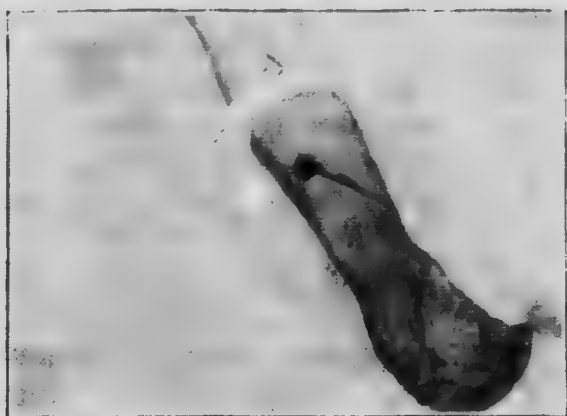


Figure 3. Tourniquet applied.

Figure 4 shows the method of application. Fasten it by either tying the suspender or by holding it fast with a piece of cord. Figures 5 and 6 show another method of improvising a tourniquet.

You see a round pebble placed on the arm above where the blood vessel is supposed to be. A handker-



Figure 4

Suspender used as Tourniquet.

chief is about to be tied over the pebble. Figure 6 shows the knot tied. Now, no matter how tight you may tie the handkerchief, there will not be enough pressure to compress the blood vessel. In this picture can be seen



Figure 5



Figure 6

Tourniquet made by knotting handkerchief and twisting with pencil. Note pebble to get pressure at proper point.

a pencil (or a small stick) slipped under the knot and now you can twist until you get the right pressure. Then the pencil or stick must be tied to the arm or leg so that it will not untwist and release the pressure.

Sometimes you will notice that pressure will not control a venous hemorrhage. This will happen if the injured vein lies deep in the muscles.

In such cases pressure must be made in the wound itself. Sometimes this should be done with the thumb, or finger right into the wound—especially when the flow of blood is so profuse that there is danger to life so that every second counts. Of course, whenever possible, it is safer to press into the wound a sterile piece of gauze and keep up pressure over the gauze. In that way you will not cause blood-poisoning. But as to saving a man's life and risking blood-poisoning—always take a chance.

Pressure by any appliance should not be allowed to remain longer than one to two hours.

Patients weak from loss of blood should be made to lie down and the head should be lower than the rest of the body. Sometimes it is necessary to stimulate the patient. Aromatic spirits of ammonia, whiskey, hot milk, or hot water may be given internally, strong ammonia spirits held to the nostrils—a B & B Vivo Roll is excellent—but first of all you must make sure that the flow of blood has been positively checked.

It goes without saying that the wound itself should be dressed according to principles which are taught in Chapter III. (Wounds).

The question presents itself: where are the blood vessels? It is not believed that it is necessary for a layman to know the exact locations of the blood vessels and their names. There are so many large and small arteries and veins in the human body that only physicians can be expected to know them.

An artery will be found by pressure—first trying near the wound— and that is all that is needed—and the same holds good for the veins also.

• What is more important is that you learn the above rules thoroughly.

Figures 7, 8, 9 and 10 show how to control hemorrhage from the neck, arm and leg by compression with the thumb.



Figure 7

Pressure on artery to check bleeding at knee or below.

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Figure 8

Pressure on arm to stop bleeding from artery between elbow and hand.



Figure 9

When bleeding is from artery.



Figure 10

When bleeding is from vein.

Illustrating method of applying pressure with the hand for wound of neck.

Special Hemorrhages

Hemorrhage From the Lungs. Patients suffering from consumption sometimes show large quantities of blood coming through the mouth from the lungs. The blood is frothy and very bright in color. The patient usually knows that the blood has been coughed up.

Treatment. Lay the patient flat. Put an ice bag over the chest (or towels wrung out in cold water). Give *no* stimulants. A small piece of ice may be put in the patient's mouth. That is all that can be done until the doctor arrives.

Hemorrhage From the Stomach. The blood is *not* frothy and comes up with a feeling like vomiting (nausea) to the patient.

Treatment. Lay the patient down. Give nothing and do nothing further until the doctor arrives.

Small quantities of blood may be vomited up when swallowed from bleeding from the nose or throat. These are not hemorrhages and are not important.

Hemorrhage From the Nose. Nosebleed is usually a trifling affair. But when the flow is severe it should be stopped. All sorts of suggestions have been made, such as to place a cold key or wet cloth at the nape of the neck, which can be tried.

The surest means to arrest bleeding from the nose is to take a small piece of cotton and force it into one or both nostrils, as may be needed, by means of a slender instrument such as a pen holder or lead pencil. Do this gently, but the cotton plug must be pressed in tight to be effective.

Hemorrhage from the Chest. If the chest has been wounded the blood will usually come from between the ribs. Plug the wound by forcing a strip of sterile gauze into the wound with a slender instrument.

Hemorrhage From the Abdomen. These cases are serious. If the injury is small and no bowels come out,

put a clean dressing over the wound and bandage tightly. If bowels can be seen—take a teaspoonful of common salt, put it in a pint of hot water. Pour this over a clean piece of gauze and apply the wet gauze gently.

The water must not be very hot. Pour a little over your arm first. You will thus be able to tell whether it is too hot.

Bleeding From Varicose Veins. A varicose vein is a vein enlarged in some places. The walls of such a blood vessel are thin and sometimes they burst.

To check the bleeding press over the vein on the side of the bleeding away from the heart, place a clean piece of gauze over the bleeding spot and bandage it very tightly.

CHAPTER V

SHOCK—(Collapse)

By *shock* we mean that threatening condition which follows after some serious injury and which is characterized by great physical exhaustion or weakness, hence often called collapse.

Shock will appear not only after serious injuries but also after burns, poisoning, etc. It follows a serious and prolonged operation. It is dangerous to life. Many an injury that would ordinarily not be in itself a danger to life produces shock and the shock has caused death.

While shock alone is not a disease, but a condition accompanying an injury or accident, it must receive attention at once.

Symptoms. The man is prostrate, skin cold and clammy, face shows anxiety (it is "pinched"), pulse can hardly be felt because it is fluttering, and breathing is very fast and not strong. (The symptoms resemble those following loss of blood—in all cases of shock look out for hemorrhage which must be stopped first before anything else is done).

First-Aid. Place patient flat, but with head low. Elevate feet and legs, if necessary. Keep patient warm, by covering him up with blankets or by placing bottles or jugs filled with hot water all around him. Be careful that the corks in the bottles are tight and that the hot bottles do not touch the skin, as you are apt to cause burns.

Internally you should give a liberal quantity of hot black coffee or tea, half a teaspoonful of aromatic spirits of ammonia, hold strong spirits of ammonia to his nostrils, use a B & B Vivo Roll.

While the patient should not be exposed to the air, especially in cold weather, you must see that he be able to breathe comfortably. For that reason the collar should be removed, a tight buttoned vest or coat loosened—but do all that *under* a blanket. In women, corset strings should be loosened or cut.

Rubbing the limbs (not beating) in the direction from the toes to the hips and from the fingers towards the shoulder will force the blood to the heart and help to tide over the patient until the arrival of a physician.

CHAPTER VI

FAINTING—(Syncope)

Fainting means loss of consciousness. Patients often will faint at the sight of blood, on hearing bad or good news, or from more material causes, such as attending a meeting in an ill-ventilated, hot room, or because of pain and the loss of blood.

Fainting is shock of a mild degree.

The treatment is the same prescribed for shock, but in most instances a dash of cold water against the face will awaken the patient, cause him to breathe deeply, regain color and get up. If not, hold a B & B Vivo Roll to his nostrils.

CHAPTER VII

BURNS

Burns occur by contact of the body with fire, boiling water, molten metal, electricity, live steam or acids.

A small burn will cause a good deal of pain and get well quickly—burns involving a large part of the body are very serious injuries, often causing death.

There are three degrees of burns:

First degree: The skin is just red and painful.

Second degree: The skin is raised up and under it is some liquid (blister).

Third degree: The skin is off, the burn has affected deep parts.

The first degree is the mildest, the third the severest. But the main danger lies in the extent, though, of course, a large first degree burn is not as serious as a smaller third degree burn.

Burns are very easily recognized; the pain, the shock and the appearance of the body at the affected places telling a plain story.

First-Aid Treatment. *First degree:* A few teaspoonfuls of bicarbonate of soda or washing soda in a glass of water make a useful lotion. A bandage, a piece of gauze or a handkerchief soaked in that solution is applied to the burned space as an ordinary dressing. Any fat or ointment such as cold cream or better still, B & B Ointment or the carbolated petrolatum in the First-Aid Cabinet will prove useful.

Should pain continue *picric acid* gauze will give immediate relief. Of course, if a fat has been applied first, it should be washed off with soap and warm water or by wiping with a piece of absorbent cotton or lint soaked in alcohol (medicinal alcohol only—wood alcohol is a poison).

Second degree: Same treatment. If the burn was caused by an acid (such as sulphuric, nitric or muriatic acid) wash the burn with plenty of lukewarm water, followed by a dressing soaked in bicarbonate of soda solution, as above described.

(If the burn is caused by carbolic acid the best thing is to apply medicinal alcohol. A suitable piece of gauze or cotton soaked in the alcohol will be best. As the alcohol evaporates very fast, the dressing should be covered all over with several layers of newspaper (or other paper) if no oiled silk is on hand).

If the burn is due to lye, wash first and then apply strong vinegar.

Third degree: Cut off all clothing at once (don't rip off) and place burned part or the entire body if need be in a warm bath and keep the water warm by adding from time to time hot water. Give patient as much water to drink as he can stand. *Treat Shock.*

A physician should be secured as quickly as possible in all except limited first degree burns.

CHAPTER VIII

DISLOCATIONS

By dislocation is meant, that one or more bones have been pushed away from the proper place at a joint or joints.

Symptoms. Compare the injured with the uninjured side of body. Dislocation shows itself in a deformity. The limb with dislocated joint may be either longer or shorter than usual. There is usually pain, and the joint cannot be used.

Treatment. Send for a surgeon and, while awaiting his arrival, do not attempt to reduce the dislocation except in the case of fingers, shoulder or jaw.

To reduce *dislocation of fingers*, grasp the wrist with the left hand, then pull the fingers straight away from the hand. The bone should slip into place.

Dislocation of the *shoulder* had best be left for the surgeon; however, if he cannot reach the case within three or four hours, have the patient lie flat on his back. The operator should remove his right shoe, place his heel in the armpit of the patient's injured side, at the same time pressing with the heel outward and upward. Usually this will pry the dislocated bone outward and upward and it should snap into place. Bandage the arm to the side, carrying the forearm across the chest with hand resting on shoulder of the other side. If there is much trouble in reducing any dislocation, wait for the surgeon.

Dislocation of the *lower jaw* may usually be reduced as follows: Wrap both thumbs in several thickness of gauze or clean cloth, rest them on patient's lower teeth on each side and with the fingers on the outside grasp the lower jaw. First, exert pressure downward and then backward. When the jaw starts into place quickly slide the thumbs off the teeth to inside of cheeks so they will not be caught when jaw springs into position. Then apply a jaw bandage as shown in Figures 11 and 12.



Figure 11

Jaw Bandage. Slit goes over chin to keep bandage from slipping.



Figure 12

Jaw Bandage completed.

This jaw bandage is made by tearing a 2-inch roller bandage. Cut off about 3 feet of bandage, tear each end lengthwise, down the center, leaving 5 inches at the middle. At the middle, cut a 2-inch slit to go over chin.

CHAPTER IX

FRACTURES OR BROKEN BONES

Fractures are of very frequent occurrence, there being perhaps ten broken bones to one dislocation. For practical purposes fractures may be classified as simple and compound.

In a *simple* fracture the bone is broken but does not protrude through the skin, whereas in a *compound* fracture it does.

A surgeon should be sent for and, pending his arrival, every care should be taken to prevent any movement of the broken limb.

How to Recognize a Fracture. The most common sign of a fracture is a deformity of the limb. Some pain is always present and is aggravated by any movement of the part. Compare the injured limb with the corresponding uninjured member. There is loss of power, and in careless handling a grating of the bone ends will often be noticed. Should no delay be expected in the arrival of the surgeon it will be necessary only to place the patient in a safe, comfortable position, carefully supporting the fractured bone on each side of the break.

If the Patient Must Be Moved. On the other hand, should it be necessary to transport the patient even a short distance, it will be safer to apply temporary splints consisting of strips of wood or almost anything conveniently at hand which when bound in position will prevent bending of the limb at point of fracture. To do this, careful examination of the limb should be made, comparing it with the one on the opposite side. This may be done usually without removing the clothing if it is thin, or by cutting heavy clothing at the seams. The limb then may be gently drawn into its natural position, suitably padded and the splints applied.



Figure 13
Triangular bandage as sling.

Fracture of the Upper Arm. After sending for a surgeon, carefully get limb into its natural position (compare with healthy arm) and apply two splints, the outer extending from the shoulder, and the inner from the armpit to the elbow. Use suitable sling for supporting the arm. Figure 14 illustrates the sling.

Fracture of the Forearm. Gently get the limb in proper position and apply splints of any stiff material which will reach from the elbow to the middle of the hand. The forearm is then placed across the chest where entire arm is to be held in position by bandage and a sling as shown in Figure 13.

Fracture of Collar Bone. The collar bone (clavicle) is probably injured more often than any other bone. The patient cannot raise arm above the shoulder and generally holds up the elbow of the injured side with opposite hand. By running fingers gently over the injured bone a difference will be noticed at point of fracture.

After sending for the surgeon, place a pad of cotton in the armpit and place the arm in a sling so it will

form a right angle. Bandage the arm to the body with a suitable bandage.

Fracture of Fingers. After cautiously drawing the fingers into proper position, apply a little padded splint under them and use a suitable bandage to hold it in place. A triangular bandage makes a very comfortable sling, giving support to both the hand and forearm.



Figure 14

Triangular bandage as sling.

Fracture of Lower Jaw. With a broken jaw the injured is unable to speak, the mouth is open and the gums may bleed. The break may manifest itself on the outside and on the inside; an irregularity of the teeth may be noticed.

The lower teeth are gently brought into their natural position against the upper and the jaw held in place with bandages—one coming over top of head and the other crossed at back of head. (See Figures 11 and 12, page 25).

Fracture of the Upper Leg. The thigh bone is so surrounded by thick muscles that it may be hard to

with
ell whether or not it is broken. If in doubt treat as
it were.

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After hurrying a messenger for a doctor, secure
two pieces of board, one of which will reach from the
hip to the foot on the outside and the other extend-
ing from the crotch to the foot on the inside. The
longer outer splint should be fastened by bandages over
the abdomen as well as the limb. The important thing
to insure against a movement of the hip joint.

Fracture of the Lower Leg. In case of a broken leg
the person naturally falls to the ground. A fracture
of the lower leg is comparatively easy to discover.
Send for a surgeon, and arrange for a suitable tem-
porary support. A trough formed by rolling two ends
of a blanket will answer (See Figure 15), or a pillow
may be used to make such a trough. In all fractures
great care should be exercised in lifting the leg so as
to apply the support. The position should be such
that the toes assume the same direction as the toes of
the uninjured limb.

If necessary to move the patient, splints should be
applied. For this purpose thin boards, long enough
to prevent movement at the knee joint and of a width
greater than the thickness of the limb, are very satis-
factory. These may be used over the blanket or pillow,
or such bulky material may be replaced with thinner

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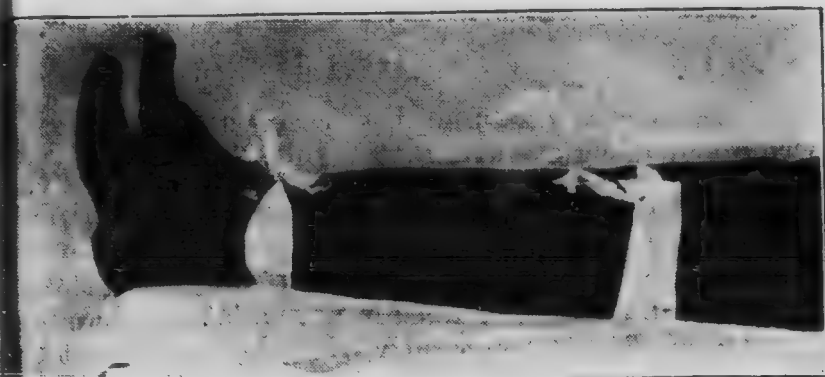


Figure 15
Splint formed of blanket rolled at both ends.



Figure 16

Rolling blanket to form splint shown in Figure 15.

padding. The splints should be fastened in place with three or four bandages or handkerchiefs, being sure that none comes over the fracture. Where wide splints cannot be obtained an umbrella or cane may be employed for the outer splint and the uninjured leg used for the inner support, the bandage encircling both legs and the splint. (See Figure 17).

Fracture of the Nose. A broken nose manifests itself in pain, swelling and deformity which are easily recognized.

Have doctor examine the case, as otherwise a permanent disfigurement may result.

Get the nose carefully in as nearly normal a position as practicable, place a small piece of cotton on each side, and hold in place with adhesive plaster strips. If no adhesive plaster is available a bandage may be passed not too tightly over the nose about the head.

Fracture of the Ribs. A person with broken ribs is apt to experience a sharp pain on coughing or

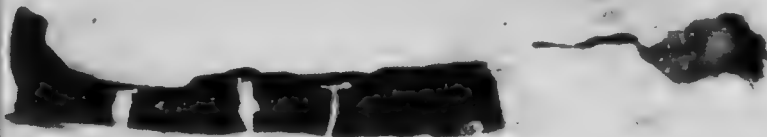


Figure 17

Cane used as splint for leg.

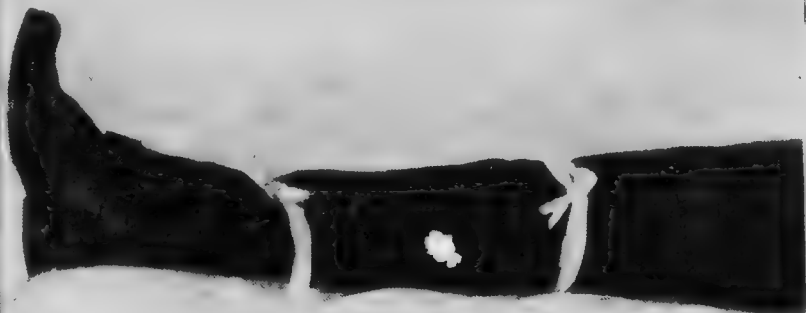


Figure 18

When no splint is to be had, bind broken leg to other leg.

breathing deeply and naturally tries to avoid a movement of the chest by pressing hand to side. Sometimes the grating of the broken ends may be detected by placing a hand over the seat of severest pain. Any movement of the bones is, of course, to be avoided.

Send for a doctor, and then undertake to limit the movement by applying a bandage firmly about the chest. In the absence of bandages use towel or anything that will answer for a binder. The physician will probably strap up the chest with adhesive plaster.

If the lungs are injured and the patient spits blood, have him hold piece of ice in mouth and keep him quiet on his back until the doctor comes.

Fracture of the Skull. In fracture of the skull there is apt to be an injury to the brain resulting in unconsciousness. If a break has occurred at the top it is easily recognized under the skin; if at the base, there may be bleeding from nose, mouth or ears.

The services of a surgeon should be secured as soon as possible and in the meantime the patient should be kept very quiet in a recumbent position with head slightly raised.

Stimulants must not be used. Wounds of the head should be dressed with a clean piece of gauze, and, if an ice bag is conveniently at hand, ice may be applied to the head. Shock should be treated by applying heat over the heart and to the extremities.

Fracture of the Spine. Send for surgeon immediately. Little can be done before he arrives. The patient should lie flat on his back. Any attempt to move him must be made with greatest care so as not to bend the spine and thus injure the spinal cord. If it is absolutely necessary to move the injured, a number of careful persons should cautiously lift him while a portable stretcher is placed under him so he can be very gently lowered on it.

Treat shock by applying heat to extremities.

Fracture of the Wrist. The common breaking of the lower end of the forearm bone, usually by a fall with the hand outstretched, is known as Colles' fracture.

Send for a doctor and if he is delayed, gently pull the hand to reduce the deformity, comparing with the other hand, and apply padded splints long enough to reach from the elbow to below the wrist. Support the forearm in a big sling at right angles with the upper arm. (See page 27).

Fracture of the Hand. The breaking of any of the bones of the hand is usually attended with pain, swelling and deformity, the broken bones making the trouble evident when back of hand is examined.

A padded splint may be applied to the palm of the hand long enough to extend back along the forearm, a pad of cotton being placed between the palm and the splint. After a suitable compress is adjusted to the back of the hand the splint is fastened in place with bandages.

Fracture of Ankle. This is known as Pott's fracture and occurs more often than any other fracture of the lower limbs. In such a case the foot is apt to turn outward and there is considerable deformity.

After sending for a doctor the foot may be gently drawn down and turned inward, a padded splint being applied on the inside of the leg extending from below the foot to the knee.

Fracture of the Foot. In foot injuries the bones are often crushed. As in all fractures, manipulation of the part to determine the extent of injury is a mistake. This should be left for the surgeon. Temporary side splints, extending far enough up the leg to hold the foot well in place, in connection with a thin splint on the sole of the foot, may be applied with suitable padding and bandages.

Fracture of Knee-Cap. Breaking of the knee-cap (patella) may be caused by a blow or a fall. The

injury is easy to recognize because the broken parts can be felt. There is swelling.

A well padded splint may be applied to the back of the leg extending well above and below the knee, and the broken parts brought together by strips of zinc oxide adhesive plaster passing above the upper and below the lower broken part. Ice bags should be applied to decrease the swelling of the knee. Send for a surgeon.

CHAPTER X

SPRAINS

Symptoms. Pain is usually immediate and severe and gets worse when joint is moved. There is swelling, but as no bones are out of place, there is no other deformity, such as is described under dislocations.

Treatment. At once provide for perfect rest and do not allow patient to move the joint. Keep the affected part in an elevated position. Use cloths wrung out in very hot or very cold water, or, allow hot or cold water to flow over the joint until relief is obtained.

If sprain is severe, or if there is any doubt about injury, send for a doctor.

CHAPTER XI

BRUISES

Symptoms. Escape of blood from small vessels into the surrounding tissue causes swelling and "black and blue" spots; immediate pain from injury to nerves and later from congested blood.

Treatment. Use very hot or very cold water. Keep bruised part in a raised position. Arnica or witch-hazel may be applied.

CHAPTER XII

ELECTRIC SHOCK—LIGHTNING

Electricity, which has proved a great blessing and comfort, has also been the cause of many accidents and deaths, in spite of all possible precautions. The tremendous "force" which drives dynamos, if it merely touches the bare skin, is sufficient to produce serious shock and burns.

Symptoms. There is no trouble recognizing the condition. Victims are still in contact with a live wire or third rail when found, either because they are unconscious and unable to get away, or if conscious, unable to release the grip.

First-Aid. Get the current stopped at once, or if this is impossible get the victim away from the current.

In dragging an unfortunate victim away from a wire or rail, charged with electricity, care must be taken not to get a part of the current from the patient. To touch the patient's bare skin—such as attempting to drag him away by the hands or by the collar—means to risk a serious shock. Cover your own hands with a silk handkerchief or your own coat, if dry, and grasp the victim's clothing only. This is reasonably safe, if the ground and the clothing are both dry.

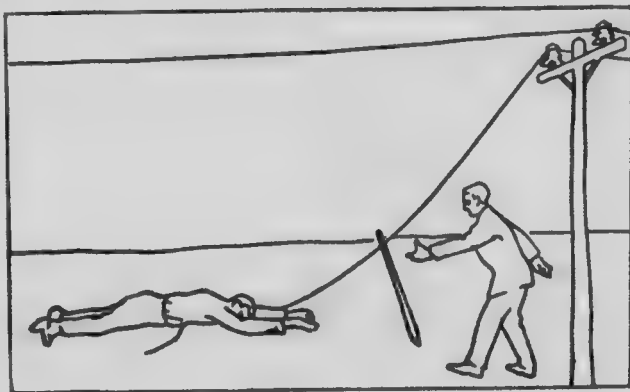


Figure 19

Diagram showing how to "short circuit" live wire.

In rainy weather, for example, your own coat between your hands and the victim's clothes would not be safe.

In such a circumstance you must become "insulated." The best insulating material is rubber. Standing in rubber boots and having your hands covered with rubber gloves, such as are used by electric workers, makes rescue safe.

If this is not available, a dry piece of wood to stand on, and a few sheets of newspaper around your hands will prove satisfactory.

Get a good hold of the patient and jerk him off the rail or wire.

Sometimes, if a sharp instrument (axe) with wooden handle can be had, it will be easier to cut the wire. Another way of releasing a victim is to throw a solid, long piece of metal (crowbar, or similar tool) in such a way that one end will touch the wire on the side of the patient nearest the main current and the other end the earth (see diagram on previous page).

In this manner the current is "short-circuited" before it reaches the patient.

First-Aid Treatment. Perform artificial respiration (Figure 20), for one hour, if necessary. (See also Chapter XIII). If the patient starts to breathe himself, treat him for shock. (See page 21).



Figure 20

Schaefer Method—Weight of body on lowest ribs.

Schaefer's Method. Place patient on his stomach, arms in front of head fully extended, head to one side so that the mouth and nose are away from the ground.

(To locate the ribs is a very simple matter, but it is suggested that a little practice on a friend without clothes is necessary, because we have seen men grasp the hip bones instead of the lowest ribs.)

Now your arms must be held straight and you swing your body and shoulders forward to throw your weight on the arms. This weight is slowly increased for about three seconds until you feel that the weight has been enough to squeeze the ribs together, then the weight is suddenly removed. It is not necessary to take off the hands for that purpose, but there must be no pressure left. Remember, also, that the pressure must stop suddenly. The reason is that when you squeeze the ribs together and release them suddenly, their spring-like action will allow filling the lungs without your aid.

Repeat the pressure after about two seconds, again holding the ribs pressed down for three seconds. You see that at that rate you will produce twelve complete acts of emptying and filling the lungs per minute.

You may see life coming back after half an hour, but do not stop. Sometimes an hour or two are necessary to cause life to come back. Stop only when sure the man is dead (after two hours!) or when patient has regained consciousness and is breathing deeply by himself.

Then get the patient into warm blankets, or keep him warm with hot water bottles as in all cases of shock.

No stimulants should be given the patient while he is unconscious, but a bystander may hold near the patient's nose a handkerchief on which has been placed a little aromatic spirits of ammonia. A B & B Vivo Roll is even better than the ammonia.

NOTE: If you are a heavy man be careful. Your body weight may cause enough pressure to break the patient's ribs.

Watch carefully until a doctor comes, because after you have revived the patient his breathing may stop without warning. You must then again perform artificial respiration.

If a man is struck by *lightning*, the same treatment should be given as if he had been in contact with a live wire, except, of course, that no time need be lost in moving the patient.

It is a fact that strong currents of electricity and lightning kill almost instantly.

However, a first-aid man should never assume the responsibility of pronouncing a victim dead.

Artificial respiration for one hour should be tried in all such cases, or until a qualified physician assumes the responsibility.

CHAPTER XIII

DROWNING

Persons who have been a short time under water and are apparently dead should be given the benefit of doubt and attempts made to restore them to life.



Figure 21

Draining water from Bronchial Passages.

Undoubtedly the simplest and best method to accomplish this is the so-called Schaefer Method. This is used by the United States Army as the best method to produce artificial breathing. (It is illustrated and described in Chapter XII.)

Drain Out Water First. As soon as the patient is taken out of the water, turn him on his face and abdomen, slide your hands under his waist, clasp them so as to get a good hold and then raise the patient as shown in Figure 21. This will drain out the water from the bronchial tubes. This step should be taken before anything else no matter what treatment is given afterward.



Figure 22. First Position.

Grasp wrists and bring hands together over chest. Note rolled coat or pad under shoulders to expand chest.



Figure 23. Second Position.

Press down on ribs, still holding wrists.



Figure 24. Third Position.

Extend arms out and up toward head, keeping them near ground.



Figure 25. Fourth Position.

Arms brought straight up. Now go back to First Position and repeat.

You may see life coming back after half an hour, but do not stop. Sometimes an hour or two are necessary to cause life to come back. Stop only when sure the man is dead (after two hours!) or when patient has regained consciousness and is breathing deeply by himself.

Then get the patient into warm blankets, or keep him warm with hot water bottles as in all cases of shock.

No stimulants should be given the patient while he is unconscious, but a bystander may hold near the patient's nose a handkerchief on which has been placed a little aromatic spirits of ammonia, or better still, use a B & B Vivo Roll.

CHAPTER XIV

POISONING

Poisoning may be an accident but very often poison is taken with the deliberate intention of self destruction.

Poisoning is always serious and requires prompt and proper aid if life is to be saved. Often enough it will be impossible to do anything, either because the poison is too deadly or because the victims have been found too late.

The first thing for a first-aid man to remember is that a physician can do a good deal if he knows the nature of the poisoning. While the very first thing to do is to send someone for a physician, an attempt should be made to find out what particular poison has been taken.

Usually, if poisoning happened by mistake, the patient points to the bottle or container holding the poison, or the container is found in the neighborhood of the unconscious victim.

Under such conditions there is little chance for a mistake.

Of course, unfortunates often take a powder, a pill or swallow from a bottle without a label—and then the problem of telling what poison has been taken is rather difficult—but not impossible.

Sometimes the odor from the bottle, sometimes the symptoms shown by the patient tell us the kind of poison that has been taken.

There are three main classes of poisons:

1. Drugs, medicines or chemicals.
2. Gases.
3. Animal bites (snakes, rabid dogs).

As far as *Gases* are concerned the diagnosis is easy. People found overcome in gas-filled rooms or in sewers or in mines—that in itself answers every question.

The treatment, too, is simple. Out into the fresh air with them: And as soon as they are taken away from harm, start artificial respiration at once.

Artificial respiration is fully described on page 64.

If you prefer Schaefer's method of artificial respiration, which is less tiring, you will find it described under "Drowning" on pages 38, 39 and 40.

People poisoned by animals require special treatment. Look for it at the end of this chapter.

The main question concerns poisoning by drugs.

For your purposes it is enough to know that there are two main classes:

1. Vegetable—sleep-producing.
2. Metallic—caustics.

Of course this division is not scientific, but good from a practical point.

Two Examples. A child swallows iye by mistake. This produces burning of the mouth, lips, tongue, throat, gullet and stomach. This is the *caustic* (etching) effect.

A man takes an overdose of morphine or opium and nothing is destroyed—nothing burned—but the patient is in a deep, profound sleep—he is "drugged." Such drugs are called "narcotics" (sleep producing). If let alone, such patients pass from deep sleep to death.

Now by these two examples you see the difference. This is especially important; because where the caustic effect is severe you must not get rid of the poison by vomiting, as you are liable to produce serious injury to an already damaged stomach, or gullet. With this one exception the great rule to treat poisoning is to get rid of the poison first and then treat conditions as they appear.

A drug which produces vomiting is called an *emetic*. You must know this because later on, when we will discuss individual poisons we shall only state when an emetic is to be given.

Vomiting can be produced by giving two teaspoonfuls of *wine of ipecac*.

Other methods of producing vomiting (emetics) are:

Give patient plenty of lukewarm water and after that tickle his throat with the finger or a feather. If you have salt or mustard handy, add half a teaspoonful of either to the glass of lukewarm water.

To enable you to find the chemical poisons quickly we have described them alphabetically.

If you look for poisoning by matches, for instance—look for matches under the letter “M.” It will refer you back to Phosphorus—which you will find under “P.”

If you want to look up Carbolic acid, you will find it mentioned under “C,” but referred back to Acid, Carbolic, as we prefer that designation. When poisons have common names, look for the common name—you will be referred back to the technical name.

POISONS

Acid Acetic. A vegetable acid much used in many industries.

Symptoms—Pain in stomach. Burning sensation in throat. There is a sharp vinegar odor from the patient's mouth.

Treatment—Baking soda or better still bicarbonate of soda is a good and proper antidote. Lime water is good, too. After that give plenty of milk.

Acid Carbolic (Phenol).

Symptoms—Peculiar odor. Lips, gums and mouth show white burns. Patient may complain of burning pain in mouth and stomach. Collapse. Convulsions.

First-Aid—Rinse mouth with pure alcohol. A grown person should swallow 3 or 4 tablespoonfuls of alcohol mixed half and half with water. Then in five minutes give 2 tablespoonfuls of Epsom Salts in a little water. Castor, sweet or olive oil, or 3 or 4 raw eggs may be given. Keep patient warm. Give stimulants

Acid Hydrochloric (Treat as for Acid, Sulphuric).

Acid Hydrocyanic (See Acid, Prussic).

Acid Muriatic (Treat as for Acid, Sulphuric).

Acid Nitric (Treat as for Acid, Sulphuric).

Acid Oxalic

Symptoms—Violent pains in stomach and bowels. Cramps in the legs. Prostration. Convulsions.

First-Aid—Chalk, lime water. If none on hand tear off plastering from wall; marble-dust will help. Follow with a tablespoonful of castor oil.

Acid Prussic

Symptoms—Very rapidly effective poison leading to unconsciousness in two minutes. The nature of the poison can be recognized by the odor of bitter almond on the patient's breath.

Treatment—Emetics. Dash cold, wet towel to face repeatedly. Give brandy. *Keep up artificial respiration for forty minutes.* If the patient can be kept alive that long—a life has been saved.

Acid Sulphuric (Oil Vitriol).

Symptoms—Intense burning pain all the way from the lips to the stomach. Lips and mouth show black burns. If the patient vomits, what comes looks tinged with blood, but is black in color. The patients have great difficulty in swallowing and

very soon collapse and become unconscious.
There may be an odor like the acid taken.

First-Aid—Give at once water into which some soap has been thrown, chalk, baking soda, bicarbonate of soda, lime-water.

Aconite

Symptoms—Prickling and tingling of tongue and throat. Weak irregular pulse. Difficult respiration.

First-Aid—Use emetics at once. Give strong tea freely. Give other stimulants. Lay patient down with head low and feet raised. Apply mustard plasters over heart and on calves of legs. Keep patient warm and resort to artificial respiration if necessary.

Alcohol

Symptoms—Odor on breath. Patient is "drunk." Face flushed. Pupils are wide. Convulsions and delirium ("seeing snakes") represent a very serious stage.

First-Aid—Emetics. Hot black coffee. Let him smell strong ammonia. Keep patient warm.

(NOTE: Men found unconscious on the street apparently very drunk may suffer from "apoplexy" or "stroke"—which means bleeding from a vessel of the brain.)

Alcohol, Wood (See Wood Alcohol).

Ammonia (Treat as for Lye).

Antimony (See Tartar Emetic).

Arsenic

Symptoms—Burning pain in stomach; vomiting and purging; hands and feet cold; patient feels faint and often has a headache.

First-Aid—Use emetics at once and, if near a drug store, get four ounces of the official arsenic anti-

dote (hydrated oxide of iron with magnesia) and give it all immediately in one dose. Magnesia may be used. Raw eggs beaten in milk may be given freely and followed with sweet oil. Keep hands and feet warm and use stimulants if indicated.

Arsenious Acid (See Arsenic).

Atropine (See Belladonna).

Belladonna

Symptoms—Dilated pupils, dryness of mouth and throat, flushed face, quick pulse, and often dizziness, convulsions and delirium.

Treatment—Produce vomiting. Give stimulants and apply heat to hands and feet. Mustard plasters may be applied to the feet with good results. Artificial respiration may be required.

Bichloride of Mercury (See Corrosive Sublimate).

Blue Stone (See Copper Sulphate).

Blue Vitriol (See Copper Sulphate).

Camphor

Symptoms—Headache, dizziness, pain in stomach, weak pulse and possible collapse. The odor of camphor will be noticeable.

Treatment—Use emetics, give stimulants, apply heat to hands and feet.

Cantharides (Spanish Fly).

Symptoms—Severe pain in abdomen, irritation of the bladder, vomiting and sometimes convulsions. Urine passed with pain, sometimes showing blood.

Treatment—Give an emetic and follow with raw eggs, milk and stimulants. Do not give oils. Use heat externally.

Carbolic Acid (See Acid, Carbolic).

Caustic Potash (See Lye).

Caustic Soda (See Lye).

Chloral (Chloral Hydrate, "Knock-out Drops").

Symptoms—Pupils, contracted at first, may dilate afterwards, skin cold, pulse feeble and slow, respiration slow; patient is overcome with lethargic drowsiness.

Treatment—Keep the patient awake. Give emetic, lay patient down with head low, apply heat to extremities, and give stimulants freely. By all means keep patient awake, and, if necessary, resort to artificial respiration.

Chloroform (Poisoning by swallowing Chloroform Liniment).

Symptoms—Burning sensation in mouth. Prostration and—if dose was large—great "sleepiness." Characteristic odor.

First-Aid—Emetic. Give a little whiskey or brandy. Slap face with cold, wet towel. If necessary artificial respiration.

Chloroform (Poisoning by inhaling Chloroform).

First-Aid—Loosen clothing: have head low and feet high. Tongue should be pulled forward and plenty of fresh air provided. Artificial respiration. Stimulants.

Cocaine—Seldom taken for the purpose of suicide. Usually one, a slave to the habit, takes an overdose.

Symptoms—Dizziness, shortness of breath, great excitement, sometimes convulsions, stupor or blindness:

First-Aid—Whiskey or brandy by mouth. Strong ammonia held close to nostrils. Strong, black, hot coffee.

Codeine (See Opium).

Copper Sulphate—Poisoning, usually by swallowing "blue stone"; also called "blue vitriol," or from verdigris.

Symptoms—Patients complain of a taste like metal, drawing the mouth together. Gripping cramps in abdomen. Vomiting and diarrhea with irritation of the rectum. Great prostration and thirst.

First-Aid—*Emetic*, unless there has been much vomiting, so that the stomach may be assumed to be empty. Give next milk, eggs, baking soda, or better still, ordinary soap.

Corrosive Sublimate (Mercury Bichloride).

Symptoms—Metallic taste, excessive thirst, violent abdominal pain, nausea, difficult breathing, small and frequent pulse, cold sweat, vomiting.

Treatment—Give freely white of raw eggs beaten up with water and immediately empty the stomach in the most practical way. Then give more white of egg.

Creosote—For symptoms and treatment see Acid Carbolie.

Croton Oil

Symptoms—Vomiting, purging, prostration.

Treatment—Empty the stomach immediately and give white of egg beaten up with water, a mixture of flour and water, or milk. Then use stimulants.

Digitalis (Foxglove).

Symptoms—Heart beats violently, although at the wrist the pulse may be slow. The skin is pale and the patient may complain of headache.

Treatment—Give an emetic and follow at once with strong tea, an infusion of oak bark or half a teaspoonful of tannic acid in a cup of water. Have patient lie flat and apply heat to extremities.

Dog Button (See Nux Vomica).

Fowler's Solution (See Arsenic).

Foxglove (See Digitalis).

Henbane (Treat as for Belladonna).

Hydrochloric Acid (Treat as for Acid Sulphuric).

Hydrocyanic Acid (See Acid, Prussic).

Hyoscyamus (Treat as for Belladonna).

Iodine

Symptoms—Vomiting and purging, the vomited matter striking a blue color with anything containing starch. Pain and irritation in throat and stomach.

Treatment—Give a quantity of starch and water or bread and water, empty the stomach immediately and give more bread and water, or better a starch paste. Milk or white of egg may also be given. If necessary follow with stimulants.

Knock-Out Drops (See Chloral).

Laudanum (See Opium).

Lead (Sugar of Lead, Lead Paints, etc).

Symptoms—Metallic taste, dryness of throat, pain in stomach, vomiting and purging.

Treatment—Evacuate the stomach and give a table-spoonful of magnesium sulphate or sodium sulphate (Epsom or Glauber's Salts) in a glass of water. Give raw white of egg, Castor oil.

Lunar Caustic (See Silver Nitrate).

Lye (Caustic Potash, Caustic Soda).

Symptoms—A bitter, burning taste way down from throat to stomach. Vomiting, looseness of the bowels. Later collapse. The mouth shows burns.

Treatment—Give olive oil. Next vinegar and lemon juice. No case should be allowed to go without a doctor's advice as the lye may narrow the gullet.

Matches (See Phosphorus).

Mercury (See Corrosive Sublimate).

Monks Hood (See Aconite).

Morphine (See Opium).

Muriatic Acid (Treat as for Acid, Sulphuric).

Mushrooms (See Toadstools).

Nitric Acid (Treat as for Acid, Sulphuric).

Nux Vomica (Dog Button).

Symptoms—Twitching of the muscles, intermittent convulsions, the head is usually thrown back with open, staring eyes.

Treatment—Use strong tea, for the tannin it contains; or, if available, give half a teaspoonful of tannic acid in a cup of water. Powdered Charcoal is also a good antidote. Empty the stomach. Resort to artificial respiration if necessary. The doctor will give specific medical treatment.

Oil Vitriol (See Acid, Sulphuric).

Opium

Symptoms—Drowsiness, stupor, deep breathing. Look at the pupils of the eyes—they are very small. Patient can be awakened by shaking and shouting into his ears, but goes back to deep sleep immediately.

Treatment—Emetic. Strong black coffee. Keep patient awake by having two men support him and walk. If breathing is poor—artificial respiration.

Antidote—Belladonna or rather its alkaloid Atropine. (Always wait for doctor who can inject antidote under the skin.)

Oxalic Acid (See Acid, Oxalic).

Paints (See Lead).

Paregoric (See Opium).

Paris Green (See Arsenic).

Phenol (See Acid, Carbolic).

Phosphorus

Symptoms—Burning sensation in stomach; vomiting and purging, the matter vomited having a garlic odor, and being luminous in the dark. Dilated pupils, weak pulse, prostration.

Treatment—Use emetics to clear out stomach, then give magnesia. Avoid oils except the acid French

oil of turpentine. Five grains of potassium permanganate in a large glass of water has proved an effective antidote. Mucilaginous drinks should be given afterward.

Potash (See "Lye").

Prussic Acid (See Acid, Prussic).

Putomaine Poisoning (Decayed Fish, Meat, Oysters, or Vegetables).

Symptoms—Dilated pupils, depression of heart, pain in stomach.

Treatment—Induce vomiting. Give a purgative and powdered charcoal. Use stimulants internally and heat externally.

Rat Poison (Is usually made from *Arsenic* and *Phosphorus*, which see).

Silver Nitrate

Symptoms—Burning in mouth and stomach with intense pain. Collapse and deep sleep. The vomited matters turn black very rapidly.

Treatment—Give at once a teaspoonful of common salt in a little water, and follow with an emetic. The other symptoms require a physician's aid.

Soda (See Lye).

Spanish Fly (See Cantharides).

Strychnine (See *Nux Vomica*).

Sugar of Lead (See Lead).

Sulphate of Copper (See Copper Sulphate).

Sulphuric Acid (See Acid, Sulphuric).

Tartar Emetic (Antimony and Potassium Tartrate).

Symptoms—Metallic taste, vomiting, burning pain in stomach, weak and quickened pulse, difficult breathing, cold skin, cramps in the legs.

Treatment—Give plenty of strong tea and warm water. If tea is not at hand, give coffee, or other stimulants. Keep patient warm.

Tincture Aconite (See Aconite).

Tincture Belladonna (See Belladonna).

Tincture Iodine (See Iodine).

Toadstools ("Poisonous Mushrooms").

Symptoms—Headache, stupor, cold sweat, colic, vomiting, prostration.

Treatment—Eliminate the poison as far as possible by the use of emetics; then follow with castor oil and cathartics. Use stimulants and apply heat externally.

Wolfsbane (See Aconite).

Wood Alcohol

Symptoms—Intoxication, headache, nausea, prostration.

Treatment—Use emetics and apply heat over heart and to hands and feet. Give strong coffee and allow patient to inhale ammonia.

Zinc All forms.

Symptoms—Colic, vomiting and purging.

Treatment—Emetics, give ordinary baking powder (bicarbonate of soda) in water and follow with white of egg and strong tea. Use heat externally and, if necessary, whiskey or brandy internally.

Zinc Chloride (See Zinc).

Zinc Sulphate (See Zinc).

POISONING BY ANIMALS

Snake Bites. Do not delay. Get at the wound, by cutting clothing if necessary, and immediately tie the limb between the wound and the heart. This may be done with a rope or handkerchief, strong bandage, or strap, as taught for the control of bleeding (see pages 15 to 19). The object is to stop as far as possible, diffusion of the poison into the general circulation. A tourniquet may well be used, but pressure should be relieved after an hour and renewed again if necessary.

Some bleeding should be encouraged even to the extent of opening up the holes, made by the snake's fangs, with a clean, small pen knife. Sucking the wound immediately after constricting the limb is commonly advised and may be done if the lips are free from scratches, cracks or sores. The wound may be burned out with a hot iron.

Give brandy by mouth.

Every person bitten by a poisonous snake should be taken to a doctor after first-aid as above described has been rendered.

Dog, Cat, Horse, Bites. If hydrophobia is suspected the limb should be bound between the wound and the heart, and bleeding encouraged. The wound should be washed out with hot water and soap. Cauterizing with a hot iron or swabbing out with full strength carbolic acid is then often resorted to.

The safest thing to do is to send the patient to a Pasteur institute. A dog thought to have hydrophobia should be confined in a safe place as long as five weeks to see if it develops the disease.

Unless the animal—dog, cat or horse—has hydrophobia its bite is not serious so long as infection of the wound is prevented by proper treatment.

Insect Stings. Apply ammonia at once, or rub with a B & B Vivo Roll, then ice or cold water, and if not at once relieved, have a doctor attend to the case. In the absence of ammonia apply cold water only.

CHAPTER XV

SUNSTROKE—HEATSTROKE—"HEAT EXHAUSTION"

Although sunstroke may occur even in the cooler seasons, people are "overcome" by the effect of the sun during the warm season mostly.

Men who drink and those weakened by other causes are more often affected by the sun's rays than healthy men.

Heatstroke. Is a condition due to exposure to great heat, especially in poorly ventilated rooms.

As the symptoms and treatment of sunstroke and heatstroke are practically the same, both will be discussed together. So-called "heat exhaustion," however, has different symptoms and requires different treatment and, therefore, will be discussed separately.

Symptoms. The patients complain of feeling "burning hot" and oppressed. These symptoms do not last long and soon the stroke victims fall into deep unconsciousness. Some may die so quickly that there is no time left to afford them aid, but the majority remain in this condition one or more hours and die unless proper help is given. In the milder forms of sun or heatstroke the patients are somewhat delirious, their faces are flushed, their breathing appears difficult, sometimes there is vomiting and convulsions.

First-Aid. Patient should be removed to a cool, shady and airy place, clothing loosened at the neck and chest (in women the corsets should be unlaced). Wash or sponge the face and chest with cold water. If ice can be had the water should be cooled by ice, or better still, a piece of ice should be rubbed over the face and chest.

Sunstroke and heat stroke are serious accidents and unless patients appear to get much better under the first-aid treatment, a physician should be sent for or the patient removed to a hospital.

Heat Exhaustion differs from sun or heatstroke in that the patients actually become exhausted from the heat and hard work. Patients will show the following:

Symptoms. Faintness, weak and rapid pulse, paleness of the face, prostration. In serious forms, like in sunstroke, one may see patients become delirious.

First-Aid. Remove to cool, airy spot. Then give stimulants. Strong ammonia or a B & B Vivo Roll may be held to the nostrils, a teaspoonful of brandy, hot coffee or one-half teaspoonful of aromatic spirits of ammonia in a little water are the best stimulants.

REMEMBER

Patients overcome by sun or heat showing a hot flushed face (fever!) *need cooling treatment!*

but

Patients overcome by sun or heat showing a pale, cool face (exhaustion!) *need stimulation!*

Frostbite. Healthy and well clothed men and women can resist cold weather to a very great extent, but when intense cold prevails and care cannot be taken to keep up the circulation of the blood, the fingers, toes, ears, and nose may become frozen to such an extent that a condition of "frostbite" results.

Symptoms. Very frequently there are no symptoms because the parts have lost all sensation. But you will at once recognize the serious trouble because the affected part looks yellowish white—dead. At first there is a tingling sensation in the affected parts, which turn a bluish color. This sensation should serve as a warning.

First Aid. The frost bitten parts should be rubbed with the warm hand. If after some effort local life is not restored the services of a physician must be secured.

It is dangerous to treat Frostbite by the application of hot water or any other strong heat.

CHAPTER XVI

BANDAGING

A bandage is nothing more nor less than a binder.

You will find in the first-aid cabinet three kinds of bandages, namely:

1. Triangular.
2. Roller.
3. Adhesive tape.

Each of them is useful.

The triangular bandage can be used with great success when only a short section of the body needs covering. Figure 29 shows the application of the triangular bandage to the hand, and Figure 30 the same bandage applied to the foot and completely tied.

Figure 26 shows the triangular bandage ready to be tied around the forehead. Figure 28 shows the same binder folded to cover the abdomen and Figure 27 the entire head.

The triangular bandage is especially valuable when large places, as shown in the pictures just referred to, are to be dressed. A large piece of sterile gauze is applied first. On top of this is placed absorbent cotton, to take up the oozed blood, and the entire dressing is held in place by the bandage.

You can readily see from Figures 13 and 14, pages 27 and 28, that the triangular bandage is very useful as a sling for an injured arm.

The pictures show plainly how the bandage is to be employed. It can also be folded, of course, to make it narrow, and used almost everywhere as an ordinary bandage, especially when a short one will do.



Figure 26
Triangular Bandage around head.



Figure 27
Triangular Bandage completely covering crown.

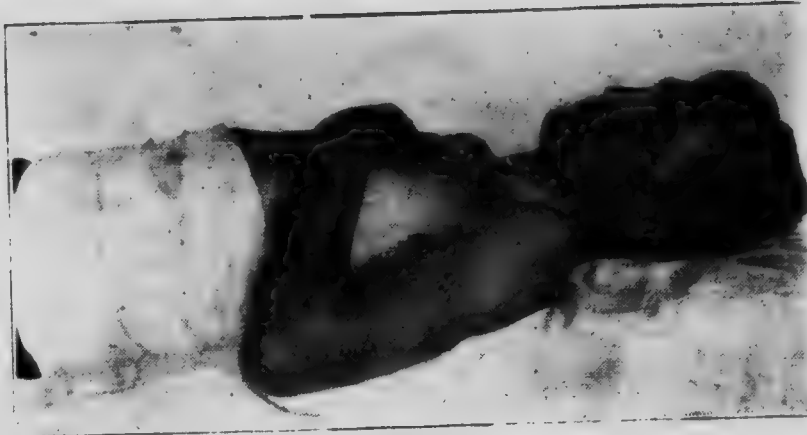


Figure 28
Triangular Bandage around abdomen.



Figure 29
Applying Triangular Bandage
to hand.



Figure 30
Triangular Bandage on foot.



Figure 31
Bandage for finger.



Figure 32
Bandage for eye.

(We would suggest that every one who desires to become proficient in first-aid should practice bandaging on some friend, on the old principle: "In time of peace prepare for war").

The roller bandage is to be preferred for fingers, toes, arms and legs. Small organs require narrow bandages—larger ones are best bandaged with broad rollers.

Figure 31 shows the best way to bandage a finger. The nail is the proper place to begin. Make there a few turns to hold the end down, then follow by turning rather snugly around and around, but in shingle-fashion (one turn covers about half of the former one) until the end of the finger closest to the palm is reached—then throw the bandage around the wrist by a few turns so it will not slip off.

The end can be fastened by a safety pin, by an ordinary pin, or by putting a small piece of adhesive plaster over the end.

Figure 32 shows a roller bandage for the eye. It can be plainly seen how the bandage is held in place by adhesive plaster.



Figure 33. Circular Bandage.

Figure 33 shows the way to bandage an arm by the "*circular*" method. If you look carefully at Figure 33 you will notice that the bandage does not fit well—there is space enough between the top two turns to put in a pencil. Such a bandage will not stay in place very long.



Figure 34. Making the reverse.



Figure 35

Bandage for foot and ankle.

The reason is that the arm is thicker near the elbow than at the wrist. In such cases it is advisable to apply a *reverse bandage*, shown in Figure 35.

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The way to apply a reverse bandage is to start with a few turns in the manner just given. As soon as the unevenness of the limb hinders the bandage from fitting closely, place the thumb or any desired finger over the top of bandage and twist the roller one-half turn towards you and then throw the bandage around. When you reach the place where the bandage was first reversed, repeat in the same manner, and keep that way bandaging and reversing until the desired space is covered.

Adhesive bandages have the property of sticking to the skin. They are useful when only a small part of finger, a scratch, a small wound, etc., is to be covered.

Of course they can be used instead of roller bandages, but cannot be removed then they are not so easily removed when dressings have to be changed.

CHAPTER XVII

ARTIFICIAL RESPIRATION

When a patient does not breathe for one or more minutes, it is important that the lungs be kept moist and that the patient breathe by artificial means.

The "pulmotor" not only accomplishes this very thing by a machine, but forces oxygen into the lungs at the same time. Oxygen is that part of air which sustains life.

But it is criminal negligence to wait for the arrival of the pulmotor and meanwhile do nothing to force air into and again out of the lungs. Finally, pulmotors are not available except in large cities and artificial breathing is the only thing available.

Before performing artificial respiration see that the mouth is clear of water (mucus, sand, etc.); pull out the tongue (the tongue can be easily pulled out with a handkerchief or piece of gauze between your fingers) and loosen collar and tight clothes. Sometimes to save time and trouble the clothes should be cut open with a knife or scissors. Place a cushion, pillow or a rolled coat under the patient's shoulders so as to raise up the chest.

Artificial Respiration by One Man

Kneel behind the head of the patient. Grasp both his arms above the wrists, lift them to the side, and back in a full circle and finally towards his head, as far as they will go—then bring the arms back to the original position and press in his chest.

By swinging the arms out, air is drawn into the lungs, by swinging them back, and pressing on the lungs air is forced out. (See Chapter XII, page 35).

Don't Hurry or Jerk the Arms! All movements must be made gradually and steadily. About eighteen times per minute is the right number.

Artificial Respiration by Two Men

Each helper kneels at either side of the patient's chest and grasps the elbow on his side. The movements are now carried out as described above. Care must be taken that both execute the movements at the same time.

After five minutes or so stop a movement or two to see whether the patient does not breathe himself.

Don't be disheartened if no results show then. Sometimes it has taken an hour or two of this work to restore life.

For description of Schaefer Method of artificial respiration, see Chapter XIII, pages 38 to 40.

CHAPTER XVIII

CARRYING PATIENTS

In large cities the public hospitals and private firms furnish ambulances for the comfortable conveyance of patients. Trained men with a stretcher (litter) come with the ambulance and carry the sufferer on the stretcher, which is suspended from the roof of the wagon by chains and springs to avoid jarring.



Figure 36
Helping injured to walk.



Figure 37

Carrying over the shoulder—the "fireman's lift."

Often it will become necessary to carry a patient suffering from an accident, after first-aid has been administered, to a more comfortable or sheltered place.

Carrying a patient, while in itself not a difficult matter, requires some knowledge and judgment.

Men, for instance, who have broken arms or legs should not be handled roughly. They must, if possible, be stretched flat on the back, and made comfortable—arms or legs must find some support to prevent jarring, even though they have been carefully splinted.

Patients who are weak from loss of blood or who suffer from shock must not only be carried in a lying (stretched out) position, but the head should be kept low at all times in order to allow sufficient blood to flow towards the brain.

In bad weather, care should be taken against chilling very young, elderly or very ill people. Such patients should be carefully covered with blankets and,



Figure 38

Back to back carry.

if possible, hot water bags, jugs or bottles, securely corked, should be placed all around the body.

It will be seldom that one man will be forced to carry a helpless fellowman for a long distance. This may happen in the woods—away from the presence of other men.

In such cases some try to carry the patient in the arms, much the same as the mother holds her baby, but this is a very impractical position as the carrier will soon get very tired.

A simpler and easier way is to "throw the helpless patient over the shoulder." (See Figure 37).

The best way is to catch the forearms of the patient and gradually and gently lift him to the full standing position. Now the carrier stoops a little, places his right hand between the legs of the patient and by means of right shoulder and hands lifts him until the patient is properly balanced over shoulder and back. In this position long distances can be covered without too much exertion.

Figure 38 shows the "back to back" position, which is obtained in a similar way to the one described for the "over shoulder" position. One advantage for the patient in this position is that he can breathe more freely, the chest being left free from pressure.



Figure 39. Carrying patient on four-handed seat.



Figure 40. The four-handed seat.

Where two men are present the problem of carrying injured people becomes much simplified.

In shops, for instance, chairs and ladders are always at hand and patients are carried as illustrated in Figures 41 and 42. A further description of these methods seems unnecessary.

Only one thing must not be forgotten that whenever two people transport a patient no matter whether they carry the patient on their hands (one grasping the back right under the shoulders—the other walking between and carrying the patient's legs), or on a ladder, door or other improvised stretcher, they must not walk in step, that is to say the front man should step off with the left foot, the rear man with the right foot. By keeping up this step (one can insure the same rate by commanding: "right! left! right! left!" or "one, two, three, four, one, two, three, four" until both have become accustomed to march with the same speed), the patient will not be jarred.

Figures 43, 44, 45 and 46, show how one of the simplest and most comfortable stretchers may be quickly produced when two poles of the right length can be had.

The "bed" proper is obtained from the two coats of the bearers. Follow these directions:

Empty all pockets to avoid losing articles. Button coats tight. Now one man picks up the two poles, as shown in Figure 44; we will call him Mr. A. Mr. B. steps up to Mr. A. between the poles, Mr. A. stoops over and Mr. B. takes hold of the coat at the end on the back and pulls it over the head until the coat has been stripped, inside out, over the poles as shown in Figure 45.

Now Mr. B. steps back to his end of the poles. Mr. A. goes up to him and does to his coat as was done to his own. The result is that a coat is slipped over each end of the poles. Now the coats can be slid together and the stretcher is ready for use. Figure 46, shows the coat-stretcher in action.



Figure 41
Carrying in chair.



Figure 42
Ladder as stretcher.

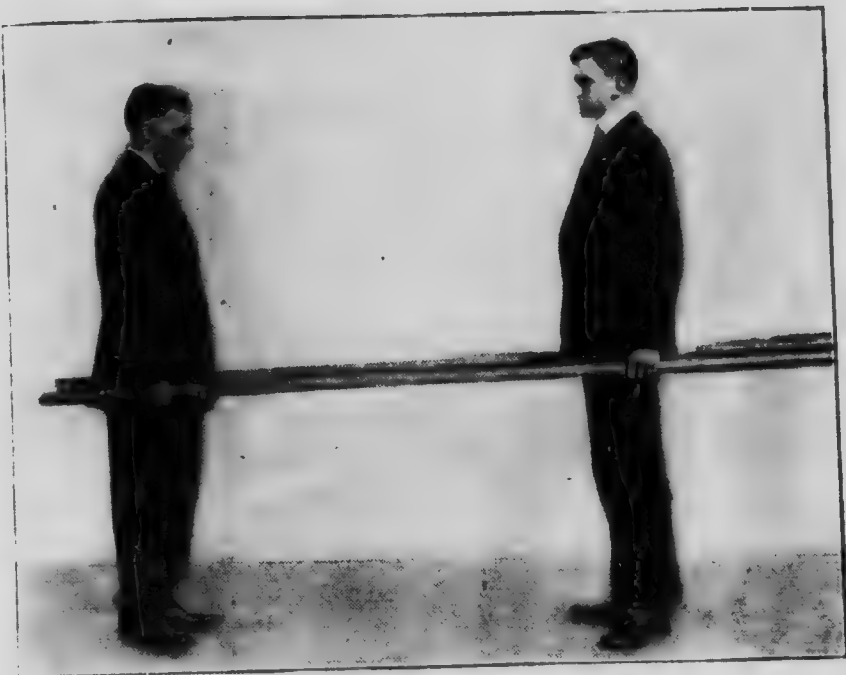


Figure 43
Coat stretcher—first position.



Figure 44
Coat stretcher—second position.

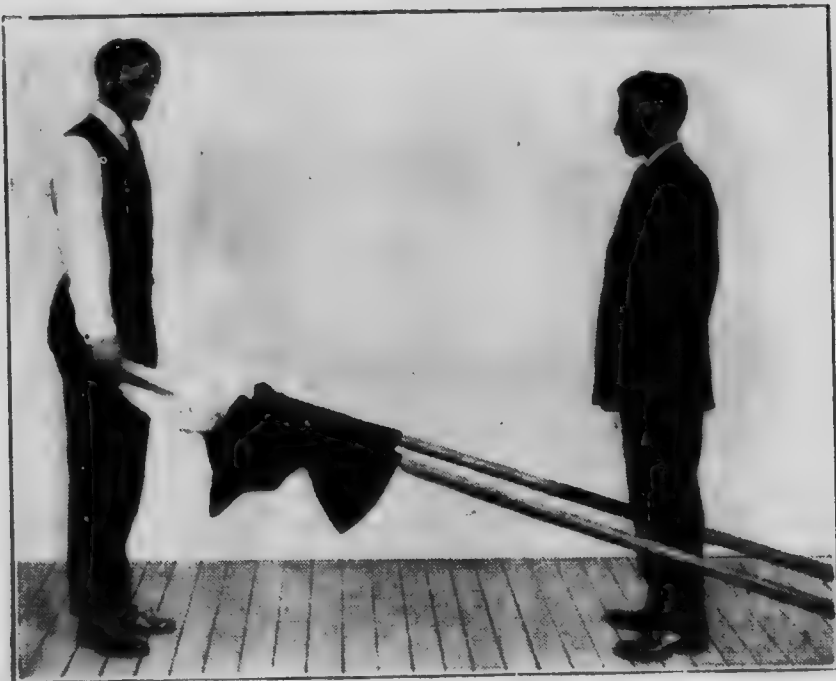


Figure 45. Coat stretcher—third position.

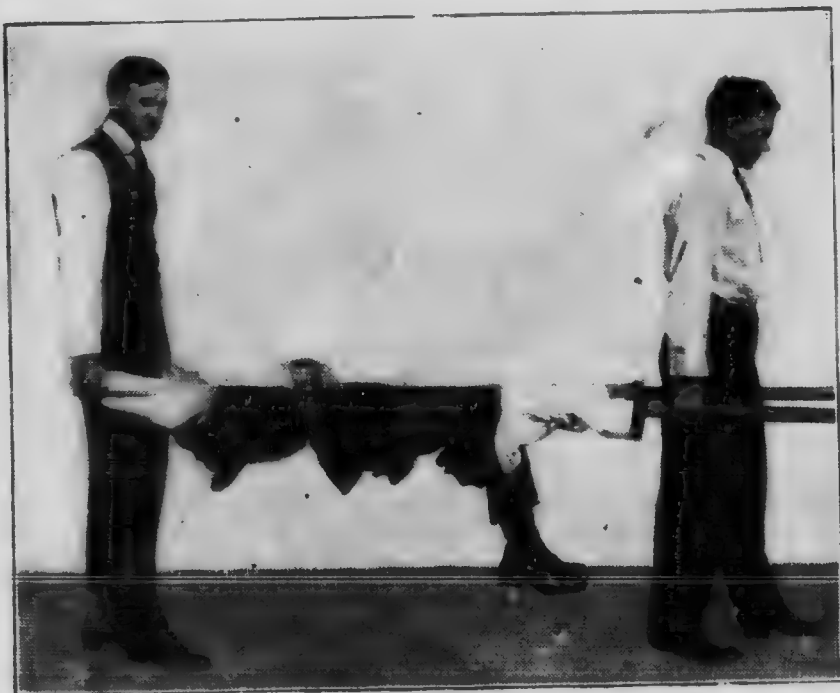


Figure 46. Coat stretcher—complete.

CHAPTER XIX

FOREIGN BODIES

Foreign Bodies in Eye. A cinder, a speck of dust, or a small fragment of wood or steel may attach itself to the upper or lower eye-lid or to the eye-ball and cause intense pain and irritation. There is never any doubt about the symptoms, because the patient feels that something has entered the eye. This may happen anywhere, especially on the street on a windy day.

Treatment. First, find the foreign body. The lower eye-lid is pressed down and the inner side thoroughly examined. Next, the entire eye-ball is carefully looked at, by having the patient look up, down and sideways. One must look very carefully, because sometimes a tiny speck will escape observation. Finally the upper eye-lid must be turned "inside out." This is best done by placing a match or toothpick across the upper fold, grasping the lid by the eye lashes and pulling the lid first downward and then upward to fold it over the little piece of wood, so that the entire inner side can be seen.

A little speck of dust, cinder, or the like, is best removed by a tiny bit of clean cotton rolled over the end of a toothpick, which is used like a brush, care being taken to exert very little pressure.

If a bit of steel has become imbedded, the patient should be referred to an eye-doctor as quickly as possible. Meanwhile the eye should be protected by a piece of gauze soaked in a solution of about half a teaspoonful of boracic acid to a glass of warm water. Use bandage or strips of adhesive plaster to keep the gauze in place.

Foreign Bodies in the Windpipe. A morsel of food may be "drawn" in and reach the windpipe. If the body is large, death may result in a few seconds. There is great difficulty in getting one's breath, the effort having the appearance of spasms.

Treatment. Send for medical aid without delay. Meanwhile turn the patient over, hanging him by the feet head down, and slap forcibly over the back. This will often dislodge the body and save life.

PART II

HEALTH IN THE HOME

What Health Departments Advise When Contagious Diseases Are Prevalent.

City health departments frequently issue suggestions to the public to check the spread of contagious diseases. Among them the following should be kept in mind at all times:

"Don't belittle the gravity of a sore throat—call in your physician without delay.

"Don't think that every attack of vomiting and a 'breaking out' of the skin is due to overloading of the stomach—follow the same course as above.

"Don't let the good women of the neighborhood diagnose what disease your child is suffering from.

"Don't seek to avoid the observance of health regulations.

"Don't put the well children with the sick—as is the practice in many families—so that they may catch the disease and 'be over with it.' It is a dangerous practice, contrary to all reason and principle, resulting in the needless sacrifice of many lives and the pitiful crippling of many that survive."

CONTAGIOUS DISEASES

The following rules for handling the more common contagious diseases are those adopted by Boards of Health generally, and have the approval of physicians everywhere.

Measles. Not very contagious in early stages, and not at all contagious during the incubation period. Very contagious to infants and young children during the period when the eruption is present. There is no contagion during desquamation or peeling, unless there be excessive discharge from the nose. It may be stated as a fact that there is no probability of the patient directly transmitting the disease after fourteen days (providing the above mentioned nasal secretions have ceased) from the development of the first symptoms.

Quarantine should be of three weeks' duration, and the patient kept from other members of the family who have not previously had the disease. Everything that has come in contact with the sick person (and especially with the secretions from the nose) should be boiled (such as handkerchiefs or other clothing) or otherwise disinfected.

The room should be thoroughly fumigated with Formaldehyde and then well aired for six hours.

Scarlet Fever. Very contagious in all stages, from the earliest symptoms to complete recovery, and a highly dangerous disease. Isolation must be complete and absolute—for a period varying from six to eight weeks and even longer if any complications such as enlarged glands, running from the ears or swollen throat persist beyond the usual time. The room in which the patient is confined must receive the most careful attention. As nearly as possible, all books—pictures and draperies, carpets and rugs should be removed, and only such toys as are of no value, and that may later be destroyed should be allowed to remain. The nurses and others who may be in attendance should wear wash dresses and rubber or oilsilk

coverings for the hair. If possible, no one except the physician and nurse should be permitted in the sick room at any time until all danger of transmission is passed. After convalescence is accomplished and the room is vacated, the most careful fumigation of the room and disinfection of everything in it should be established. This is best accomplished by the use of Formaldehyde after all crevices and cracks have been sealed. Dresser drawers and closet doors thrown open and all parts of the room and its immediate environs thoroughly exposed to the fumes.

Diphtheria. The prevention of the spread of this disease depends upon early and strict quarantine and the free use of antitoxin on the well and on the sick members of the family. The Quarantine should include all those in whose noses or throats the bacilli have been found. It should extend over a period of four to six weeks—or more properly until two distinct cultures from the infected portions of the body, taken at 48 hour intervals, reveal the absence of the specific micro-organism. The sick room should be cut off from all others—preferably at the top of the house. It should be as nearly bare of furniture as possible and kept at an equable temperature. All pets should be excluded from the room—dogs and cats may carry diphtheria. Wooden tongue depressors should be used when examining the throat and burned immediately. In fumigating afterwards everything that has become contaminated, that can be destroyed, should be burned. All clothing should be well boiled. Fumigate with Formaldehyde as in Scarlet Fever, carefully laying bare all corners, drawers of tables and dressers and all adjoining closets.

Just now sanitarians are debating whether or not terminal fumigation is necessary after measles, scarlet fever and diphtheria; three or more boards holding that it is not. We wish to state the facts just as they are, uninfluenced by our being manufacturers of fumigators. However, we feel justified in advising the reader to act on the safe side and fumigate so long as the doctors disagree.

Whooping Cough. Whooping cough is very contagious when the cough first begins. By the time the whoop stage is reached the disease is much less contagious. It ceases to be contagious long before the whoop stops.

Whooping cough is very dangerous to suckling babies and moderately dangerous to children between 1 and 3 years. Mothers with very young children must guard carefully against whooping cough.

The quarantine against whooping cough is of five weeks' duration. During the first two weeks, starting from the beginning of the cough, not the whoop, the sick child may play in the house or yard, but he must keep away from all other children. During the next three weeks he may go around the streets, but he must obey the following restrictions:

He must keep out of the street cars.

He must keep away from school, Sunday school, church, and every other form of meeting.

Children from a family in which there is whooping cough must keep away from school unless they have had whooping cough.

Mumps. Persons with mumps must be kept in the house away from other children until recovery is complete. Quarantine lasts two weeks. No signs are posted. All linen should be boiled, and it is well to give the house a thorough scrubbing, airing, and sunning. The patient should bathe thoroughly and put on clean clothing before going back to school or to work.

Chicken Pox. The principal reason for the interest of health departments in chicken pox is because smallpox is sometimes called chicken pox. Chicken pox in persons who do not have recent typical vaccination scars should be carefully inquired into. Assuming that the diagnosis of chicken pox is established, not much need be done.

Children with the disease are excluded from school. Children from the family are also excluded for at least two weeks from the last exposure.

Tuberculosis. The following—one of a number of State regulations of similar character—is quoted from the report last received from the Wyoming State Board of Health:

“The premises occupied by tuberculosis patients should be thoroughly disinfected when for any reason vacated by them, and health officers should insist on a rigid enforcement of this regulation.”

The Montana State Board of Health in its last biennial report (up to 1915) says: “When any dwelling is vacated after having been occupied by any persons known to have been suffering from tuberculosis, such dwelling shall be thoroughly disinfected in the manner prescribed by the State Board of Health for all other communicable diseases, except that the time the house shall remain closed for the action of formaldehyde gas shall be eight hours instead of four.”

“SAFETY FIRST”

On the subject of protecting the public health, let us now turn from our far West to our extreme East.

On page 217 of U. S. Public Health Bulletin No. 62, (Communicable Diseases: An Analysis of the Laws and Regulations for the Control thereof in Force in the United States), is the following from a court decision in the State of Maine:

“No precaution can be neglected in disinfecting. Where the public health and human life is concerned the law requires the highest degree of care. It will not allow of experiments to see if a less degree of care will not answer. The keeper of a ferocious dog or mad bull is not allowed to let them go at large to see whether they will bite or gore the neighbor's children. Nor is the dealer in nitro-glycerine allowed, in the presence of his customers, to see how hard a kick a can of it will bear without exploding. Nor is the dealer in gun-powder allowed to see how near his magazine may be located to a blacksmith's forge without being blown up. Nor is one using a steam-engine allowed to see

er of how much steam he can possibly put on without
from bursting the boiler. No more are those in charge of
State small-pox patients allowed to experiment to see how
little cleansing will answer; how much paper spit
upon and bedaubed with small-pox virus it will do to
leave upon the walls of the rooms where the patients
have been confined. The law will not tolerate such
reason experiments. It demands the exercise of all possible
nsist care. In all cases of doubt the safest course should be
last pursued, remembering that it is infinitely better to
elling do too much than to run the risk of doing too little.
persons (Seavey v. Preble, 64 Me. 120.)"

such The U. S. Public Health Bulletin Number 42
anner advises thorough terminal fumigation with formalde-
other hyde gas in cases of communicable diseases generally
house—small-pox, chicken pox, measles, diphtheria, erysipelas,
e gas tuberculosis, scarlet fever, etc.

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FUMIGATION

Popular Science of Fumigation and Aerial Disinfection

Fumigation is, in the present acceptation of the word, the use of fumes for the purpose of destroying disease germs, insects or vermin. For this purpose disinfectant gases are used. While there are a considerable number of these, there are but two in common use. These are:

Formaldehyde, the best aerial *germicide*.

Sulphur dioxide, the most practical *insecticide*.

The meaning of the words germicide and insecticide is clear when we remember that in each case the latter part of the word "cide" comes from a Latin verb meaning to kill; hence germicide means germ-killer and insecticide, insect-killer.

The best authority we know on disinfection says, "A gas is the ideal weapon for destroying such an invisible foe as the infection of the communicable diseases."*** There is practically only one gas suitable for general application—viz., formaldehyde. This substance comes nearer being an ideal disinfectant than any of the gases so far exploited. It is not poisonous, does not injure fabrics, colors, metals, or objects of art and value." ***

In combating the infection from communicable or commonly called contagious diseases we need the most efficient aerial germicide. This is formaldehyde.

To destroy insects we should use sulphur dioxide (obtained by burning sulphur). As ordinary sulphur is hard to light thoroughly so that it will burn completely, sulphur fumigators, supplied with wicks for ready ignition, afford the easiest and most definite means of generating sulphur dioxide.

The reader right here will wonder why formaldehyde will not answer for both purposes. This feeling

is very natural, because as a rule, germicides also act as insecticides. Formaldehyde is an exception to this rule, and yet is so very far superior to other aerial disinfectants for germicidal purposes that it practically stands alone in this field.

Another natural question is: Why will not sulphur answer for both purposes, killing disease germs as well as insects? Well, it will if enough of it is used in an atmosphere sufficiently moist. But, as will be explained farther on, the fumes of burning sulphur, under conditions which make them efficiently germicidal, are injurious to fabrics, household furnishings, etc. These conditions are not necessary when sulphur is used merely as an insecticide.

There is still another very natural query: Why not generate formaldehyde gas and sulphur dioxide together and get their combined effect, thus destroying both disease germs and insects at the same time? We tried this and found it unsatisfactory. The two gases instead of acting as synergists, hindered rather than helped each other.

The right way is to use *formaldehyde* by itself in *moist, warm air* for killing *disease germs*, and *sulphur* by itself in *dry air* for killing *insects*.

In the B & B Formaldehyde and Sulphur Fumigators we have aimed to supply the best fumigating agents in the most convenient form.

Description of the fumigators and full directions for their use follow:

B & B Formaldehyde Fumigator

The objects to be accomplished by a formaldehyde fumigator are:

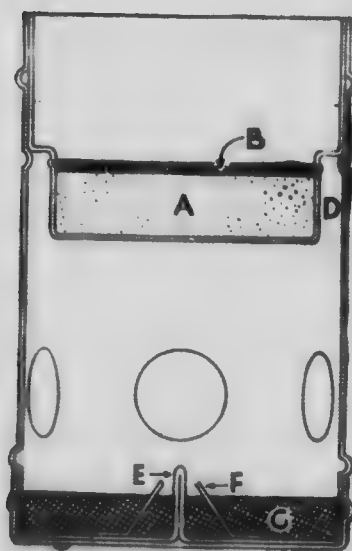
First—To liberate sufficient formaldehyde gas readily and in good volume.

Second—To insure against the gas catching fire. Burning destroys the efficiency of formaldehyde.

Third—To supply moisture so that there will be a coincident generation of formaldehyde gas and steam.



B & B Formaldehyde Fumigator



Sectional Diagram

- A**—Solidified Formaldehyde. **B**—Paraffin Seal.
D—Space admitting heat to bottom and sides of Formaldehyde Cup.
E—Wick. **F**—Regulates Flame. **G**—Paraffin of Lamp.

Fourth—The preservation of the solidified formaldehyde in a moist state so as to insure greater efficiency of the gas when generated.

The upper figure on page 80 represents the fumigator in use; the lower cut is a cross section showing construction.

Directions for Using the Formaldehyde Fumigator

Lift the cap which constitutes the lamp and place on opposite end of the fumigator. It is best to remove the paraffin seal (tinted blue to make it distinct) from over the formaldehyde by running a penknife around the edge; but this is not really necessary. If left in place there will be considerable residue of paraffin remaining after all the formaldehyde has been driven off. The lamp may be lighted before placing on bottom of fumigator, or afterward by holding at an angle. Place the fumigator in a shallow tin or saucer containing enough water to rise to the raised line or bead—never enough to overflow into the paraffin of the lamp. Very cold water in a large dish may retard action of lamp. Add a little water to the upper cup—one-half tablespoonful for the small size, one for the medium and two tablespoonfuls (1 ounce) for the large size. Leave the room tightly sealed for at least five hours—better twelve.

No water need be added to the formaldehyde if the air is warm and moist, as it always should be for best results. There is already water combined with the formaldehyde to provide for steam being generated with the gas. We advise sprinkling the floor thoroughly and heating the room as well as practicable. If at best the air is too dry and water is added, avoid an excess over amount directed for a given size. If cup is filled too full, it may boil over and extinguish the flame.

Preparing the Room for Formaldehyde

Cracks around windows, doors, flues, etc., should be made as tight as practical. Drawers, boxes, books, etc., should be opened, and bedding and clothing

spread out or hung up so as to expose everything as fully as possible to the disinfecting gas. The temperature of the room should be 70° F. or above, and the air moist—never less than 50 per cent saturation, and better much more humid. If possible, boil water in the room to make the air moist and in all cases sprinkle the floor well with water.

Amount of Formaldehyde to Be Used

The margin of safety is important in such work as fumigating after contagious diseases. True economy demands efficiency. Where human life is at stake nothing is economical which does not insure the maximum of security. The proportion of solidified formaldehyde (on the basis of dry formaldehyde content) which has commonly been employed, is one ounce per thousand cubic feet of air space. The United States Public Health and Marine Hospital Service recommends that not less than two ounces be used for the space mentioned. We accept this standard and advise its adoption. Any comparison of price should be based on net formaldehyde content and provisions for enhancing its efficiency.



Large Square Fumigator.



Large Round Fumigator.

Directions for Using B & B Sulphur Fumigators

For Insects. We take up the use of sulphur as an insecticide first, because sulphur dioxide from burning sulphur is the best aerial insecticide there is, and because formaldehyde is far preferable if the object is to kill disease germs.

The advantage of using a good sulphur fumigator, instead of ordinary bulk sulphur lies in the fact that it is very difficult to ignite either powdered sulphur or lump brimstone. The fumigator is the convenient, safe and definite way in which to use sulphur for fumigation.

To kill insects, have the air of the room as dry as practicable, seal the room as tightly as possible and place the fumigator in an old pan resting on bricks or any fire-proof support. The B & B Round Sulphur Fumigator weighing one pound affords a convenient unit for apportioning quantity to space. According to the best authority, "as an *insecticide* sulphur does not require the presence of moisture; since it acts equally well in a dry as in a moist atmosphere the less injury there will be to furnishings, colors, etc."

A one-pound Sulphur Fumigator to 1000 cubic feet—say a room about 10 x 12 feet and of average height, according to U. S. Public Health Bulletin No. 42, "kills flies and mosquitoes within two hours; and if the atmosphere is reasonably dry, very little injury will be done to the ordinary room furnishings." Two one-pound fumigators should kill rats within four hours and five pounds should destroy bed-bugs, roaches, lice, etc., within six hours.

For Disease Germs. This is another story. When sulphur is used as a *germicide*, five pounds should be employed for each 1000 cubic feet. Unless the air is naturally moist it should be made so by causing water to evaporate in the room, by sprinkling or spraying it about, or, if convenient, causing it to "boil away." About three ounces of water should be evaporated for each pound of sulphur burned. Metal fixtures may well be given a tin coat of vaseline, and delicately colored fabrics removed from the room. The injurious effect of sulphur, burned in a *moist* atmosphere, on room furnishings in itself is sufficient argument for using formaldehyde where the purpose is to kill disease germs—Formaldehyde has no injurious effect on room furnishings, etc., whatever.

The Cost and the Result

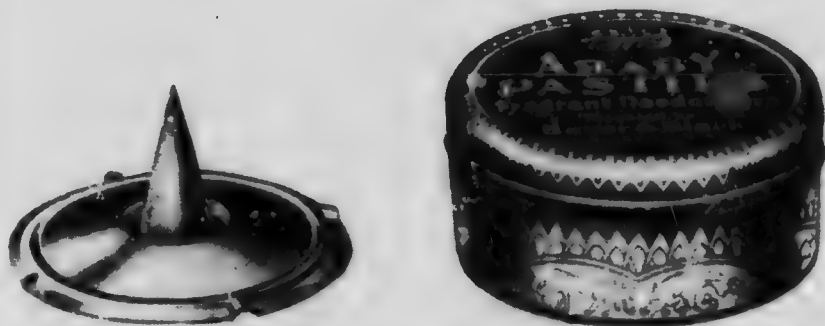
"What's worth doing at all is worth doing well." This old saying applies with perhaps more force to fumigation after communicable diseases than to anything else. The expense of proper medical care and the discomforts of quarantine are taken as a matter of course. But, when it comes to making the rooms which the patient has occupied safe for others to use, so many people have resorted to such cheap and inefficient means of aerial disinfection that in some quarters fumigation has been unjustly discredited. It pays to take no chances in matters of this kind. The cost of proper fumigation on the most liberal scale is but a trifle compared with other expenses connected with a case of contagious disease, and which may be made necessary again if the room remains infected.

Bear in mind: Plenty of formaldehyde volatilized (never burned) in warm moist air is the thing for killing disease germs, and plenty of sulphur burned in dry air is the proper thing for destroying insects. Do not undertake to use the two at the same time. "One thing at a time and that done *well*" expresses the correct idea of how to rid a room of microbes and insects with minimum effect on household furnishings.

If only disease germs are to be destroyed, then only formaldehyde is necessary and there will be no injury whatever to any objects in the room, plants and pets having been removed.

To determine the effect of full formaldehyde fumigation on house plants, we subjected a variety of them to an all-night fumigation in which three ounces of solidified formaldehyde were volatilized in 1500 cubic feet of air space.

Five out of twenty appear to have survived formaldehyde. As seventy-five per cent were either seriously injured or destroyed, we advise removing plants when fumigating with formaldehyde, as has always been the custom in sulphur fumigation.



Araby Pastils.

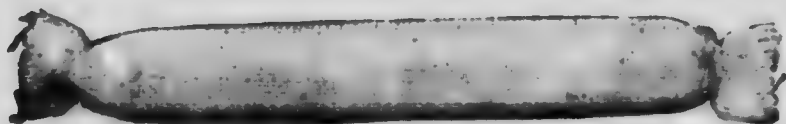
DEODORIZING DE LUXE

Up to this point we have discussed fumigation in the sense of true gaseous disinfection. But efficient disinfection cannot be accomplished while the room is occupied. We can only partially purify the atmosphere and make it more agreeable for patient and attendants.

Let us now consider fumigation in its primitive or etymological meaning. The word is derived from the Latin *fumigare*, literally to fume or smoke. Using the prefix *per*, signifying through, we have our word perfume and a more agreeable subject.

The odors of oriental gums, lending the hygienic quality to perfumes of a refreshing and agreeable kind, suggest themselves, and we have sought to actualize the idea in ARABY PASTILS in so far as consistent with the most efficient action. But this purifying effect, in the nature of things, can only be partial, and must not be relied upon for real disinfection.

When the room is vacated by a person who has been ill with one of the communicable diseases, B & B FORMALDEHYDE FUMIGATORS—true disinfectors—should be employed.



How to Break a Vivo Roll when needed.

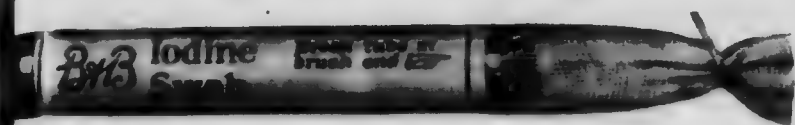
VIVO ROLLS

In cases of shock, fainting, drowning and unconsciousness from other causes, it is often helpful to hold smelling salts or aromatic ammonia near the nostrils of the patient.

These aromatics, however, where contained in bottles lose strength so rapidly that often they are valueless when most needed.

Vivo rolls, on the other hand, never lose strength. Each roll is a hermetically sealed glass capsule wrapped with absorbent material. At the center it is scored to break readily.

When broken, the liquid diffuses into the gauze covering of the roll. Simply hold the roll carefully near the patient's nostrils.



Iodine Swab—Actual Size.



Breaking tip.

Applying.

B & B IODINE SWABS

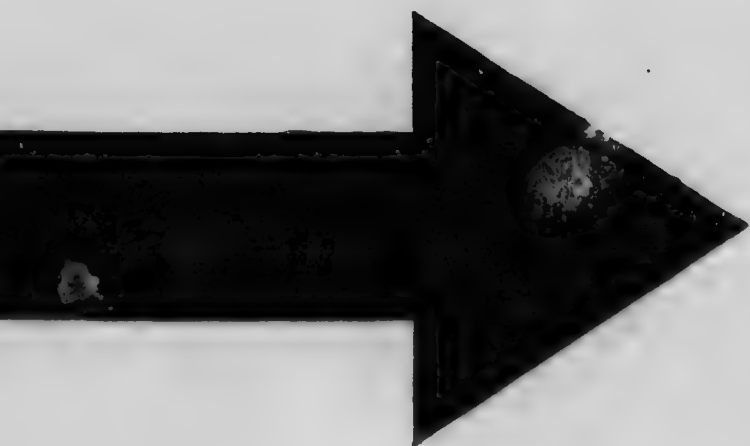
Tincture of Iodine has come to be recognized by authorities generally as an unequalled antiseptic for external application in first-aid work. It should be applied to all wounds and abrasions—all cases of broken skin. And the sooner it can be applied the better.

In B & B Iodine Swabs we offer this antiseptic in ideal form. The swab is a strong glass tube completely enclosed in a gauze covering of many thicknesses. At one end this gauze is gathered to form a brush inside of which the glass tube has been drawn to a point so it is easy to break with the fingers.

To treat a wound with the B & B Iodine Swab, simply break off tip of the tube inside the gauze brush which is then used to paint the wound and surrounding skin.

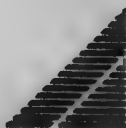
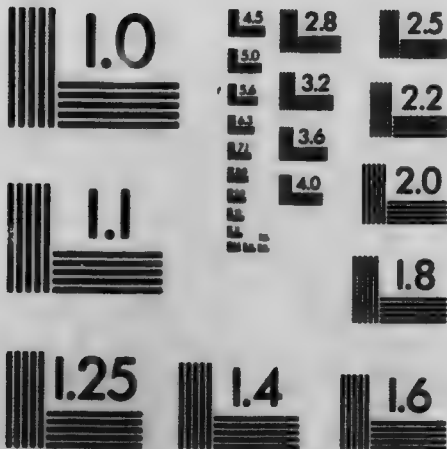
This method is far superior to attempting to keep iodine in a bottle. The liquid rapidly attacks the cork and quickly evaporates. It also tends to deteriorate through the formation of hydriodic acid from exposure to the air. This acid is a source of irritation. B & B Iodine Swabs avoid this because hermetically sealed.





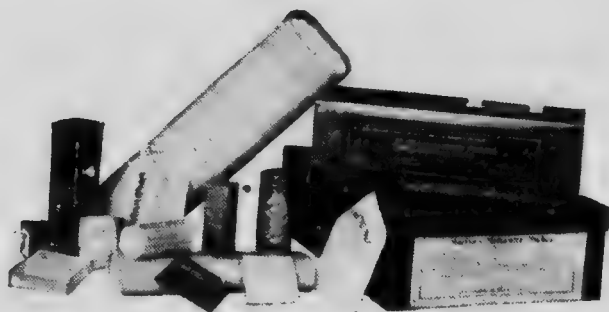
MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



APPLIED IMAGE Inc

1853 East Main Street
Rochester, New York 14609 USA
(716) 482 - 0300 - Phone
(716) 208 - 5888 - Fax



Martin's Maternity Packet.

PREPARATIONS FOR CONFINEMENT

In making preparations for baby's arrival, doctor and nurse are to be consulted—for the articles that they will need must be in readiness. Of first importance are aseptic dressings. They prevent infection and are savers of life and health.

Physicians do not all desire exactly the same dressings in confinement cases, but all agree on a few essentials which will always be needed.

For convenience in buying, these most necessary dressings have been selected and put up in a compact box called "Martin's Maternity Packet," which druggists can supply. Everything is prepared in our aseptic laboratories. Each packet contains:

Obstetric Sheet—to protect the bedding.

Handy Package Absorbent Cotton, one pound—for pads and compresses, to absorb discharges, and for making cushions under patient.

Plain Gauze, two yards—for packing, bandaging and absorbing discharges.

Aseptic Umbilical Tape—for tying cord.

Muslin Binder—for mother.

Flannel Binders, two—for infant.

Aseptic Lint Squares, one dozen—for washing infant's eyes.

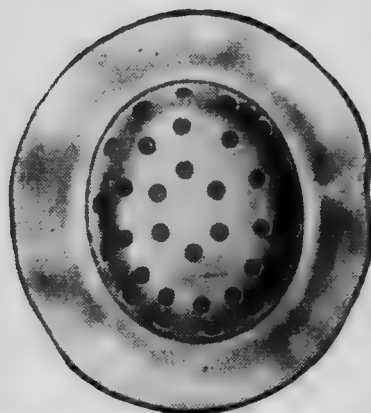
Castile Soap—Pure, Imported. Aseptic Sponge.

Carbolated Petrolatum—in collapsible tube, for lubrication.

Talcum Powder—to prevent chafing, use after bathing the baby.

Chamois—for applying powder.

Safety Pins, one paper each—large and small.



TO PROTECT VACCINATION SORES, BOILS AND CARBUNCLES

Nothing is more detrimental to the rapid healing of a vaccination, a sore, a boil, a carbuncle, an inflammation, than constant irritation.

It is natural that a sore of this nature must be kept perfectly clean and free from foreign matter, and at the same time be protected from the rubbing of the clothing.

Good's Celluloid Vaccination Shield represents the practical working out of a good idea. The ordinary bandage does not afford the protection necessary for a vaccination sore, boil, carbuncle or similar tender affliction. Healing is retarded by the irritation caused either by the bandage itself or the rubbing of the clothing against the bandage.

When Good's Vaccination Shield is worn the sore is amply protected while left entirely free from contact. It holds the clothing away from the sore; is comfortable, and insures perfect cleanliness and freedom from foreign matter. The Good Shield is transparent, so it is unnecessary to remove it to examine the progress of the sore. It is perforated, too, permitting the free circulation of air and preventing the feverish sensation which comes from close bandaging.

The adhesive plaster that encircles the celluloid shield and holds it in place, will conform to the shape of the muscles and the swelling or inflammation of the sore without pulling or irritating the skin.

Good's Vaccination Shields are sold by drug stores.

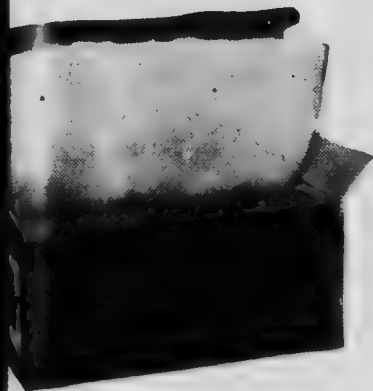


Absorbent Cotton—Test it yourself.

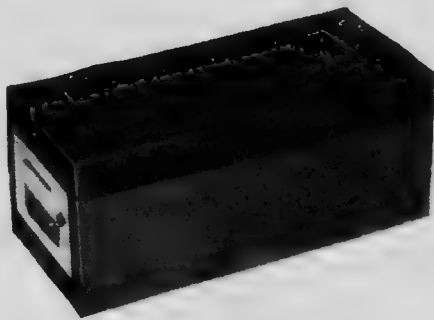
ABSORBENT COTTON

Absorbent Cotton, often called “medicated cotton,” “antiseptic cotton,” etc., differs from ordinary cotton batting not only because it is made from a better grade of raw cotton fibre, but also because it is sterilized and in addition treated in such a manner that it readily takes up or absorbs liquids—something that ordinary cotton will not do. Well bleached cotton batting may appear to be just the same as the Absorbent Cotton that the druggist sells but you can tell one from the other instantly by simply dropping a bit of cotton in water. The Absorbent Cotton will sink quickly to the bottom, while cotton batting will float indefinitely.

Absorbent Cotton is the only sort that is fit for use on wounds, and doctors are careful to select only the best, such as B & B Absorbent Cotton, put up in sealed germ proof cartons.



Open



Closed

The B & B Handy Package opens on the side.

HOME USES

While Absorbent Cotton is generally thought of first of all as a dressing for wounds, it has scores of home uses, and people who know these are never without it.

Straining Jellies, Clear Soups, Home Made Wines, Etc.

Absorbent Cotton is the best possible filter to remove sediment or cloudiness of any kind from liquids.



Splitting layer of Absorbent Cotton for straining liquids.

The easiest and quickest way is to place the cotton between two squares of gauze (cheese cloth will do). It is not necessary to use the full thickness of a layer of cotton as it comes from the package but one of these layers can be split (see cut).

An unbroken layer of cotton, between gauze, should cover the entire top of the funnel so that there will be no spots without cotton to allow liquid to pass through unfiltered.

Corking Milk Bottles. A piece of cotton used as a cork absolutely keeps out dust, germs and mold spores. It should always be used to protect baby's milk. The same applies to opened bottles of syrup, cider or jars of jelly, etc.—anything in fact that develops mold when allowed to stand exposed to the air.

Straining Baby's Milk. Use the same method, cotton between gauze, as described for jellies, etc. The cotton removes dust, germs and all sediment. Up-to-date dairies all strain milk in this way. Tops of milk pails are covered with cotton and gauze, so the milk is filtered during milking.

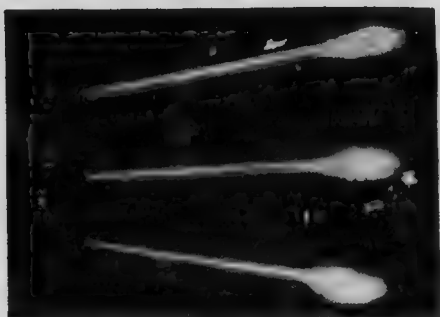
Baby's Toilet. Nothing is better for sponging baby's delicate skin than a piece of soft absorbent cotton. Use it also for bathing eyes and applying soothing lotions.



Cotton between gauze for straining jellies, soups, milk, etc.



Absorbent Cotton keeps germs and dust out of milk.



Absorbent Cotton Swabs for baby's toilet.

To wash an infant's mouth, ears and nose, the nurse makes small swabs by twisting bits of absorbent cotton on the ends of large tooth picks (see cut).

After bathing, a small square of absorbent cotton makes a better powder puff than one of down or wool. For the cotton is used but once, then thrown away. And fresh cotton is sure to be absolutely clean and non-irritating.

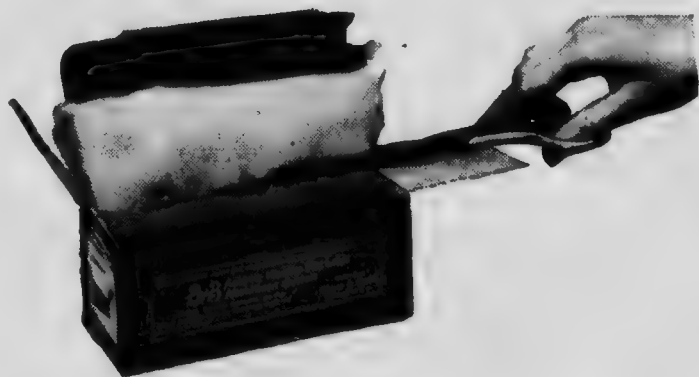
On the Dressing Table. Small squares cut from sheet of absorbent cotton are now used for applying face powder; as well as liquids and creams. At receptions and teas a pile of these individual cotton squares on the dressing table is a toilet refinement appreciated by every guest.

Applying Salves and Ointments. In treating wounds, sores, burns, etc., a soft covering like absorbent cotton is soothing. And better than anything else it absorbs any discharge.

Covering Poultices. As a heat-retainer the value of Absorbent Cotton is considerable, and it is recommended as a covering for poultices and other hot dressings.

Washing Paintings. Pure soap and warm soft water are best for cleaning and brightening oil paintings. But absorbent cotton, rather than a cloth or sponge, should be used to prevent any chance of scratching or injury to the finish of the picture.

Absorbing Perspiration. Use absorbent cotton to get quick relief from the unpleasantness of too much perspiration. The feet for example. Often perspiration causes the skin under the toes to crack and these cracks become painful. A long narrow strip of absorbent cotton woven back and forth between the toes will end the trouble.



The B & B Handy Package. Cut off what you want without touching the rest.



**Mother's Mustard Plasters
in Envelope.**

MUSTARD PLASTERS AS AN EXTERNAL STIMULANT

It is hardly necessary to describe the value or enumerate the uses of mustard plasters, as everyone has been familiar with them from childhood.

For years mustard plasters have been considered the very best of household emergency remedies.

The whole value of a mustard plaster lies in the fact that it is a powerful counter-irritant.

Counter-irritation means the production of an artificial irritation in an unaffected part of the body, to draw pain from an affected part.

Mustard Plasters produce "counter-irritation" by drawing the congested blood, which produces the inflammation at the affected part, to an unaffected part where the mustard plaster is applied, thereby relieving pain at the diseased part.

Mustard Plasters should be so placed as to best draw congested blood from the inflamed part.

Mother's Mustard Plasters and B & B Mustard Plasters overcome all objections to the old time home-made mustard plaster. They come prepared ready for instant use, they are of absolutely uniform strength, and they never spoil if kept in a dry place.

In brain congestion, concussion, paralysis, delirium, narcotism, headache, apoplexy, stupor, apply frequently on the arms, calves of legs and the abdomen.

In sleeplessness, mania, hysteria, epilepsy, apply to legs and soles of feet.

In affections of the chest, colds and bronchitis, whooping cough, coughs, asthma, congestion, apply to pit of stomach, legs and feet.

In vomiting spasm, nausea, pains, sea sickness apply over stomach, just below breast bone.

In abdominal troubles, spasms, cholera morbus, dysentery, peritonitis, painter's colic, pain in liver, colic pains, diarrhea, cholera, use frequently on arms, and legs and abdomen.

* * * *

When about to apply the mustard plaster, first soak in cold or lukewarm water for two minutes. Then apply the mustard side next to the skin.

Mustard plasters should *never* be allowed to remain long enough to produce a blister. On a sensitive skin five or ten minutes' application of a mustard plaster will produce a bright red patch. That is sufficient. Remove the plaster and apply another at another spot if necessary. Never allow a mustard plaster to remain on longer than thirty minutes.

When the red spot is formed it will probably burn for some minutes after the plaster is removed.

To stop burning, use full strength grain alcohol



Belladonna Plasters in Box.

MEDICATED PLASTERS

Medicated plasters or porous plasters are deservedly popular. Often they bring quick relief from aches and pains. There are nearly a score of different medications, some of them that should be used only under a physician's advice and others that may be applied with benefit by anyone.

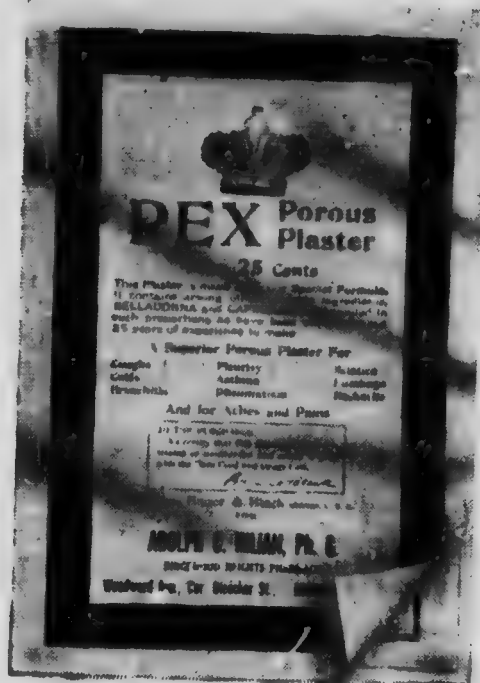
The more widely used plasters are mentioned below, together with notes on their application.

Belladonna Plasters. These are more generally used than any other plasters: probably more than all other medications combined.

The properties of Belladonna Plaster are anodyne and anti-spasmodic, the action is mild and a belladonna plaster may be worn for a considerable period.



King's Kidney Plaster.



Rex Porous Plaster

This plaster is useful in: Acute Bronchitis, Coughs, Colds, Chest Pains, Cramps, Hiccough, etc.

Rex. Rex Porous Plasters are made according to an exclusive Bauer & Black formula. Rex is what might be called an all-round plaster, excellent in any case where a plaster is helpful. Rex is a superior plaster for Hoarseness, Difficult Breathing, Cold on the Chest, Coughs, Lame Sore Muscles, Sprains, Strains, etc.

Belladonna and Capsicum. A very popular plaster, combining the anodyne effect of belladonna with the warming and counter-irritant properties of capsicum. Useful in Coughs, Colds, Hoarseness, Lumbago, Lameness, Sore Muscles, Stiff Joints, etc.

Kidney. Heavily spread on cotton flannel and shaped to fit the 'ack. Kidney plasters with their soothing, anodyne effect afford relief in Backache, Lame Back, etc.

Pleurisy. Strapping the chest with plaster is recognized treatment for pleurisy, and the B & Pleurisy Plaster spread on heavy red felt is shaped especially for this and contains soothing, warming ingredients that relieve pain. A large part of the benefit from a plaster, in treating pleurisy, is to keep the ribs from moving. A pleurisy plaster should therefore be applied with some tension instead of being merely laid on.

Strengthening. Where a mechanical support is required for lame back, weak muscles, etc., this is an excellent plaster. But as it is not a medicinal plaster, no effect other than support, massage and protection of the part is to be looked for. Use strengthening plasters for Injuries to Ligaments and Tendons, Sprains, Chronic Lameness, Weak Back, etc.

The benefits from medicated plasters in general are considerable. They support the muscles over which they are applied and at the same time give an added relief from local pain through the action of the drugs that they contain.

How to Apply a Plaster. See that the skin is thoroughly clean and dry. Bend the body or limb in such a way as to gently stretch the skin, and, while the part is in this position, apply the plaster, just as it is without heat or moisture, rubbing down to insure perfect contact.

How to Remove a Plaster. To remove any plaster, the best and most pleasant method is to loosen an upper corner and drip alcohol between the plaster and the skin. No pulling whatever is necessary.



Small Bottle



Large Bottle



Collapsible Tube

HEALAL Liquid Court Plaster

Healal is a perfected, antiseptic, liquid court plaster. It is thoroughly waterproof and on this account is useful in many cases where any other protection would be useless. Being transparent and colorless it is practically invisible when applied.

Unusual flexibility makes Healal adhere firmly without cracking, loosening or peeling.

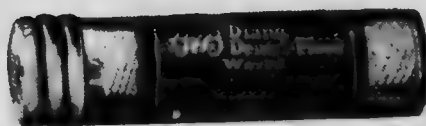
For cuts, slight burns, bruises, chaps and small abrasions of the skin, Healal gives proper protection from air and germs.

Healal Styptic Strips. With Healal bottles, both large and small sizes *styptic strips* are included. The purpose of these is to check bleeding. One of these strips pressed on a cut will quickly stop the flow of blood so that Healal can be applied without delay.

Healal Liquid Court Plaster can be bought at drug stores everywhere.



Jap Tooth Silk in
Metal Box.



Dental Floss—in Bottle.

TAKING CARE OF THE TEETH

Clean teeth never decay.

Tooth decay has its start in a very small way.

A tiny morsel of food may lodge between the teeth and soon the germ action that ensues destroys the enamel on the tooth and decay sets in.

Eternal vigilance against the lodgment of these food morsels is the only way to prevent decay. And the best way to prevent these food lodgments is *not* by means of tooth picks, etc.

Picking one's teeth after meals with a tooth pick is not only unseemly and bad form, but it is really *not effective*.

Often small portions of food remain and cause the trouble.

The best way to remove these food portions from between the teeth is by means of Dental Floss.

Jap Tooth Silk is made of silk of the very best quality—strong and aseptic.

It is put up in a neat container absolutely dust proof, each container holding ten yards of silk. This container can be carried conveniently in the vest pocket or in a lady's purse.

Even the thorough use of a tooth brush will not cleanse the crevices between the teeth that are so easily reached with Jap Tooth Silk.

To have and keep perfect teeth, use both tooth brush and Dental Floss every day; occasionally or "when I think of it" will not do; persistent, regular care of the teeth is essential.



Ford's Menthol Inhaler.

TO RELIEVE COLD IN THE HEAD

Medicated vapor, especially when the principal ingredient is menthol, is of great value in the relief of certain throat and head affections and in the treatment of headaches and neuralgia.

For the relief of distressing colds, catarrh, hoarseness, etc., the use of a good menthol inhaler can be recommended. It may be used freely in connection with any other treatments and is always helpful.

Ford's Menthol Inhaler is perhaps the best and most convenient. It is a finely finished aluminum tube with perforated round ends which permit free passage of air through the menthol. A tight fitting cap of the same metal covers each end when not in use—preserving the full strength indefinitely.

Ford's Menthol Inhalers are small, light and attractive looking. They can be carried in a man's vest pocket or a lady's purse as readily as a small fountain pen, always ready for use; they should be carried during the season when colds are prevalent as a preventive as well as a quick relief from distressing symptoms.

ADHESIVE PLASTER

A Complete "Repair Kit"

Adhesive plaster, "surgical plaster" or adhesive tape, as it is variously called, is prepared by spreading on cloth, by means of heavy machinery, a "plaster mass" consisting largely of pure para rubber, but with which have been ground gums, resins and oils to give it lasting adhesiveness.

Zinc Oxide Adhesive Plaster, quite outside its wonderful field in surgery, is an exceedingly handy thing for mending or sealing all sorts of things. It sticks to wood, metal, cloth, glass or rubber—in fact to any dry surface—as firmly as it does to the skin.

Around the House. Broken tool handles, broom handles, chair legs, whips, window panes, canes, umbrella handles, jars, flower pots, gloves, etc., etc., may be permanently mended. Moreover, since this plaster is waterproof, leaky garden hose can be patched and even lead or iron water pipes temporarily repaired—since adhesive plaster sticks to metal as well as to any other dry surface. In addition, hot water bottles, ice bags, rubber gloves, and rubber or leather boots and shoes can be patched perfectly. Rubber coats and ordinary clothing of all kinds can be mended by bringing the edges of the torn place carefully together and pressing adhesive plaster on the inner side. Adhesive plaster forms a perfect air-tight seal for fruit and preserve jars; it will hold corks and glass stoppers tightly in bottles that are taken along when traveling.

In the Office. There are almost hourly uses for adhesive plaster in a business office. Aside from covering cuts and protecting fingers, it is superior to metal "clips" for holding together correspondence. Durable index tabs are quickly made with it and instantly attached exactly where wanted. It forms a perfect insulation for electric light wires. And for torn book covers, letters, etc., there is nothing so easy to apply.

For Autoists. No automobile repair kit would be without its ten-yard spool of Zinc Oxide Adhesive



Adhesive Plaster Cylinders one yard long.

Plaster if all owners knew from experience even a few things that can be done with it in emergencies. Loose tires may be bound on, inner tubes patched, small blow-outs patched, or a leaky radiator fixed. A wire connection can be insulated, a rattling wind shield silenced, a broken celluloid window patched and even a complete temporary fan belt made.

For Sportsmen and Athletes. Nothing makes a better grip on tennis racquet, golf club, or baseball bat, than adhesive plaster, one inch wide.

Wrapped tightly around the splintered shaft of a golf club or to bind a split or hold a loosening ferrule on a fishing rod, adhesive plaster, carried in the pocket will often prevent the loss of a whole day's sport.



Adhesive Plaster on Spool.



Applied for Bowling

Sportsmen's boots can be given an immediate and practically waterproof emergency patch.

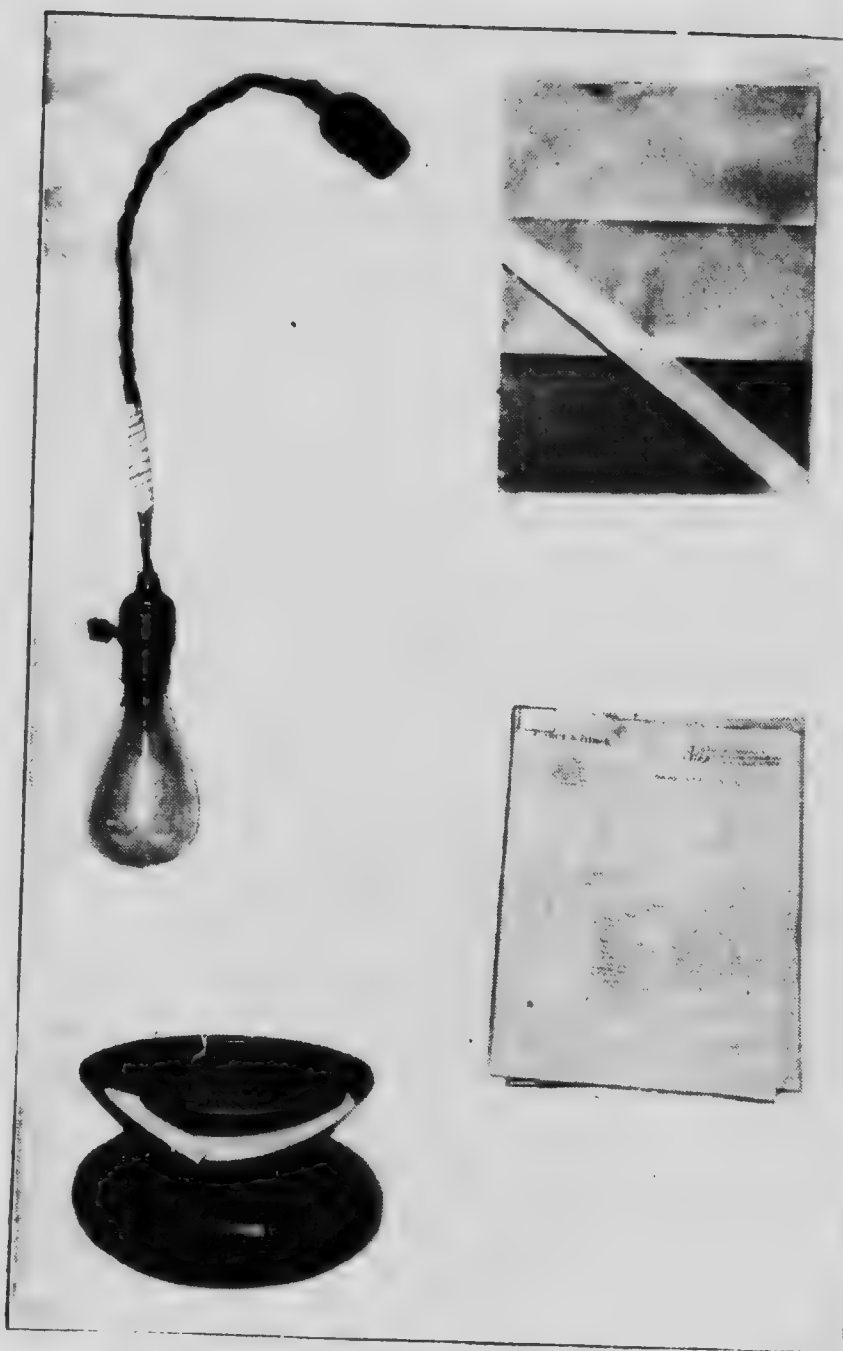
Bowlers, fishermen and golfers in particular, secure protection to their fingers and hands that enables them to avoid blisters and sore, chafed skin.

B & B Zinc Oxide Adhesive Plaster is sold by drug stores, put up in more than a score of convenient styles and sizes from the small pocket size cylinders and flat boxes of one yard and the two and one-half and four-yard spools to the large rolls seven and twelve inches wide that surgeons require.

For ordinary everyday uses the five and ten-yard spools which come in widths from one-half inch to four inches are the most desirable as well as the most economical.



Applied for Fishing.



Adhesive Plaster—At the Office

Insulates electric wiring. Mends torn letters and binds correspondence. Repair for cracked cuspidor.



Adhesive Plaster—Around the House.
Binding and patching sheet music, mending crockery, binding split and broken wood, chairs, broom handles, etc. Repairing book covers, patching rubber gloves and hot water bottles, mending ice bag or flower pot, sealing preserve jars, mending leaky garden hose, wrapping broken tool handles.



Adhesive Plaster—for Sportsmen.

Makes superior grips for golf club, tennis racquet or baseball bat, mends split shaft of golf club, patches glove, holds ripped cover on tennis ball, supports strain or painful arch of foot, protects and prevents blistered heel.

ACCIDENT CASES

A good deal of the value in First Aid work depends upon the dressings used.

One may know what to do in an emergency and how to do it—yet benefit the sufferer but little because surgically clean dressings are not at hand when needed.

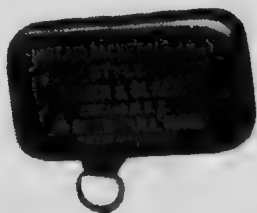
The B & B Accident Cases supply dressings that are prepared in our aseptic laboratories under the same rigid inspection as those which we supply to the United States Army and Navy and in assortments of convenient size for every purpose—for traveling, motoring and for the home as well as the factory.

The following list of these accident cases, giving the contents of each, will show how carefully the dressings have been selected and how well each is adapted for its special use.



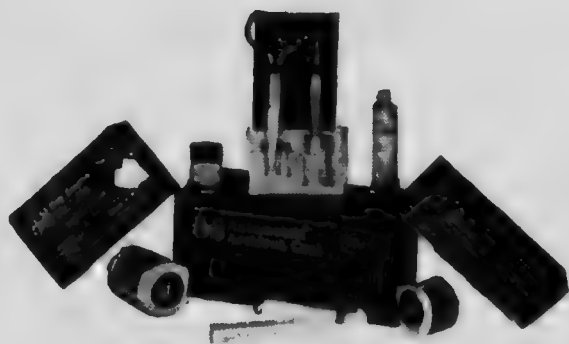
No. 2—Travelers' Accident Packet. Pocket size, sealed carton, containing:

One Compress. One Triangular Bandage. Safety Pins.



No. 3—U. S. Army Style. First Aid Packet. pocket size metal case, containing:

Two Compresses. Safety Pins.



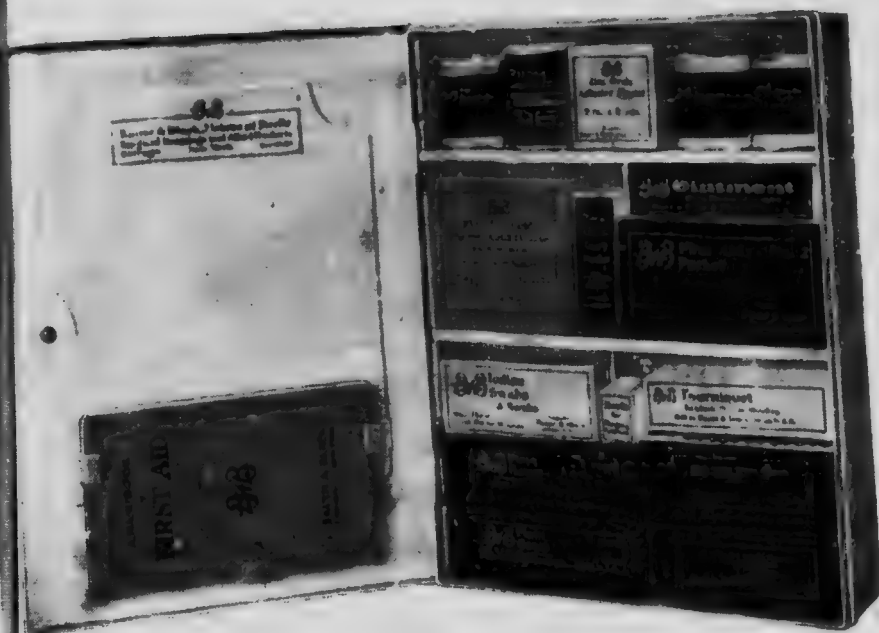
No. 4—Automobile Accident Case. Enameled metal case, size 3 inches by 7 inches, containing:

One First Aid Packet No. 2. One yard Plain Gauze. One Gauze Bandage. One Muslin Bandage. Two Iodine Swabs. One box Adhesive Plaster. One tube Ointment. Scissors. Tweezers. Safety Pins.



No. 5—Family Accident Case. Cardboard box, size 6 inches by 9 inches, containing:

One First Aid Packet No. 2. One yard Plain Gauze. One ounce Absorbent Cotton. One piece Picric Acid Gauze. Two Gauze Bandages. Four Muslin Bandages. One box adhesive Plaster. Two Iodine Swabs. One Tourniquet. One Belladonna and Capsicum Plaster. One tube Ointment. Safety Pins. First Aid Handbook.



No. 10—Household First Aid Cabinet. This is a pressed steel wall cabinet, white enameled inside and out. No lettering appears on the outside. It forms a most fitting and attractive fixture for bathroom or nursery.

The contents were selected to cover the needs of home first aid. They are:

One Spool Zinc Oxide Adhesive Plaster, 2 inches by 5 yards. Two yards Plain Gauze. Two 1-ounce Packages Absorbent Cotton. Two Gauze Bandages, 1 inch by 10 yards. Two Gauze Bandages, 2 inches by 10 yards. One Muslin Bandage, 2 inches by 5 yards. Four Envelopes Handy-Fold Picric Acid Gauze. One First Aid Packet No. 2. One Envelope Mother's Mustard Plasters. One Package Blue-jay Corn Plasters. Three Iodine Swabs. Four Vivo Rolls. One Tube Household Ointment. One Bottle Healal Liquid Court Plaster. One Tourniquet. One Paper Safety Pins. One B & B First Aid Handbook.



No. 6—First Aid Cabinet. Enameled metal wall case. The cabinet measures $19\frac{1}{2} \times 12$ inches—3 inches deep. It is strongly made of sheet metal, enameled a dark blue inside and out. There are handles for carrying, and rings for hanging against the wall. A small padlock will lock it.

On the inside of the cover, printed in large type, are brief, adequate instructions that anyone can follow. It holds in compact get-at-able form the following:

Two First Aid Packets No. 2. Two Burn-Dressing Packets. Four one-yard packages Plain Gauze. Two quarter-pound packages Absorbent Cotton. One Spool Zinc Oxide Adhesive Plaster, 1 inch wide. Four Gauze Bandages, 1 inch by 10 yards. Eight Gauze Bandages, 2 inches by 10 yards. Six Gauze Bandages, $2\frac{1}{2}$ inches by 10 yards. Six Muslin Bandages, 2 inches by 5 yards. Six Muslin Bandages, $2\frac{1}{2}$ inches by 5 yards. One Bottle Antiseptic Solution U.S.P. One Bottle Aromatic Spirits Ammonia. Six Iodine Swabs. One Jar Carbulated Petrolatum. One Tourniquet. Four Splints. Two Papers Safety Pins. One Pair Scissors. One Pair Tweezers. One B & B First Aid Handbook.

No. 7—Miners' First Aid Cabinet. Enameled metal wall case, 11½ inches wide by 18 inches long, containing:

Twelve Triangular Bandages, in cartons. Forty-two Sterile Bandage Compresses; eighteen small, eighteen medium, six large. Six yards Picric Acid Gauze. Bottle Aromatic Spirits Ammonia. Six Paper Cups. Six Splints. One Tourniquet. Spoon. Scissors. Tweezers. Safety Pins. B & B First Aid Handbook.

No. 8—Industrial First Aid Cabinet. Enameled metal wall case. Complies with requirements of New York State Law. Contents:

Four 1-yard packages B & B Plain Gauze. Four ½-ounce B & B Handy Package Absorbent Cotton. One ¼-pound Handy Package Absorbent Cotton. One Spool Zinc Oxide Adhesive Plaster, 1 inch by 5 yards. Eight Gauze Bandages, 2 inches by 10 yards. Four Gauze Bandages, 2½ inches by 10 yards. Six Muslin Bandages, 2 inches by 5 yards. Four Muslin Bandages, 2½ inches by 5 yards. Twelve B & B Iodine Swabs. One First Aid Packet No. 2. One Burn-Dressing Pack^e. One 2-ounce bottle Aromatic Spirits Ammonia. Two 3-ounce Collapsible tubes Petrolatum and Bicarbonate Soda, 3%. One 2-ounce bottle Castor Oil. One 2-ounce bottle Boric Acid Solution, 4%. One Pair Scissors. One Pair Tweezers. Two Packages Safety Pins. One Tourniquet. Four Wooden Splints—two sizes. One dozen Wooden Applicators, wound with cotton. One dozen Wooden Tongue Depressors. One Graduated Medicine Glass, 4 ounce. One Eye Dropper. One B & B First Aid Handbook.



Small Handy-Fold Plain Gauze with two strips of B & B Zinc Oxide Adhesive Plaster, one-inch, for eye dressing following the removal of a foreign body.

HANDY-FOLD PLAIN GAUZE

Here is an ideal emergency dressing for wounds, boils, sores, vaccination, etc. Surgical gauze is folded again and again to make small square pads of many thicknesses and with no raw edges exposed.

Each piece is enclosed in a transparent paper envelope and steam sterilized after being sealed.

There are two styles of Handy-Fold Gauze, both, however, are put up in boxes containing five yards. The size of the individual pieces constituting the difference—for in one there are thirty envelopes of gauze; in the other ten envelopes.

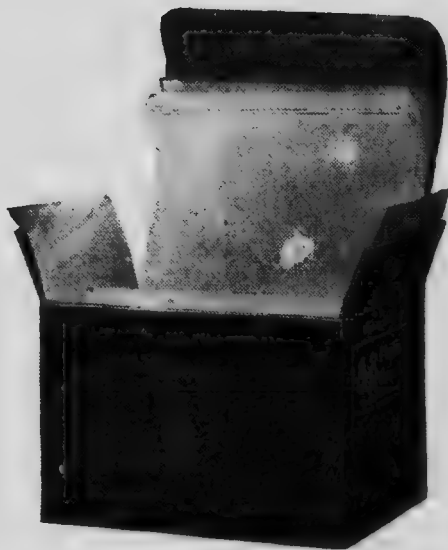
The important feature of Handy-Fold Gauze is the sealed envelope. It gives positive assurance of asepsis. For whether a wound requires a single pad or several, the envelope protects the gauze up to the moment it is applied.



Handy-Fold Plain Gauze—6 x 36 inches.



Handy-Fold Plain Gauze—18 x 36 inches.



Plain Gauze—Five-Yard Handy Package Open.

SURGICAL GAUZE

Plain Gauze prepared especially for the purpose by being made exceedingly absorbent as well as freed from any irritating substances and finally *sterilized* is the one safe dressing for wounds.

B & B Plain Gauze is prepared with particular care and is unusually white, soft, free from impurities and absolutely neutral.

Moreover, B & B Plain Gauze in both one and five-yard rolls (the sizes generally wanted) is put up in transparent paper, placed in cartons and then sterilized; after which it is sealed to exclude dust and germs without again being opened. This process insures an aseptic gauze that can be depended upon for every kind of wound dressing.

Another feature of B & B Gauze is the Handy Package. As the illustration shows this carton opens on the side so that the gauze that is needed can be unrolled and cut off without taking out and handling the entire roll, thus exposing it to possible contamination. Ask your druggist for B & B Plain Gauze to get this package and perfect contents.



Plain Gauze Bandage.

BANDAGES

While there are a number of different bandages which are used by surgeons, such as flannel, plaster paris, crinoline, starched, etc., two kinds: gauze and muslin (or roller) bandages fill every common need.

Generally speaking, the purpose of any bandage is simply to hold dressings in place. Bandages are not in themselves wound dressings, but are applied over gauze, absorbent cotton, etc., to hold such dressings over the wound.

Gauze bandages are thin, soft and absorbent. For these reasons as well as for their clean, white appearance, they are more generally used than the unbleached muslin bandages.

Roller bandages of unbleached muslin are firm and strong. They are used to cover gauze bandages when the part is to be used, such as on the sole of foot, hand etc. Where a firm support, through tight binding is required, they are much better than the lighter gauze bandages.

Ten yards is the regular length for gauze bandages and five yards for muslin.

Both kinds of bandages should be rolled firmly. The edges should be free from ravelings. Finally they should be wrapped and sealed to protect them before use.



Roller Bandage.



B & B Household Ointment

A SUPERIOR HEALING SALVE

For everyday use the most satisfactory kind of ointment to be applied to cuts, burns, abrasions, sores, etc., is one that is soothing. Antiseptic qualities should be present, but not in a form that will irritate even a raw surface

As an emollient, with unusual healing qualities, B & B Household Ointment is most satisfactory. And we believe it to be ideal for household use for application to scratches, cuts, abrasions, skin eruptions, etc., and as a general healing application.

B & B Household Ointment is applied in the usual way, spread on absorbent cotton or lint. It should be used freely and is certain to bring gratifying results.



BLUE-JAY FOR CORNS

A corn may be caused either by pressure or friction. From pressure or irritation, the skin becomes hardened, and callous spots result. When these layers of skin are more condensed they form a corn, which is a callous spot with a hard center that acts like a foreign body to irritate and inflame the spot. The callous places are found most often on the bottom of the foot, while the corns generally appear on the toes.

How to Remove a Hard Corn. To remove the ordinary hard corn, apply a Blue-jay Corn Plaster.

Before applying Blue-jay, it is very important to bathe the foot in hot water for ten minutes and thoroughly dry. The object of this is to soften the corn and aid the penetration of the B & B wax.

After the corn is removed, the toe may remain sensitive for a few days—until the nerves regain their natural protective cushion. During that time the best protection is Blue-jay with the B & B wax scraped out.

How to End a Soft Corn. The cause of a soft corn is the same as that of a hard corn—pressure and friction, the only difference being that a soft corn is caused by one toe rubbing against another instead of against the shoe.

To cure a soft corn, bathe the foot in hot water to reduce the inflammation and apply Blue-jay with wax removed, as described in circular.

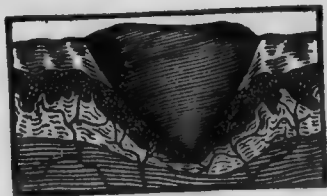
If there is much perspiration wear a bit of B & B Handy Package Absorbent Cotton between the toes.

Vascular Corns and Callosities. Vascular corns appear invariably on the sole or ball of the foot, and are the outgrowth of the callous spots so often found here.

A vascular corn is filled with minute blood vessels, making treatment a difficult matter, but Blue-jay will afford immediate relief from pain.

Avoid This Dangerous Practice. The "trimming" or cutting of corns or callosities with knife or razor cannot be too strongly condemned. Blood poisoning has resulted from the use of sharp instruments.

All recognized writers on Chiropody, particularly those of authority in the world of medicine and surgery, continually warn their readers against applying an ordinary knife or razor to the foot.



This picture shows a hard corn as it lies imbedded in the toe. The corn is V-shaped, and the pain is caused by the lower point pressing on the nerves.

Paring a corn simply removes the top of it. For a few days, that may relieve the pressure. But the corn grows again very rapidly, because the root of the corn is left.

Paring a corn, like any form of home surgery, is exceedingly dangerous. The slightest slip of the blade may lead to a stubborn infection—to blood poisoning. No cutting of corns should ever be attempted.

Common Corn Plasters Will Not Cure. The purpose of the ordinary old style felt corn plasters is simply mechanical—to protect the corn from further irritation. Blue-jay is a new idea.

The secret of Blue-jay is that it takes out the corn—root and all—without pain or discomfort and does it in 48 hours.

Blue-jay is absolutely free from harmful chemicals or dyes.

Blue-jay is sold by druggists everywhere.

INDEX

Abdomen, bandaging	58
Abdomen, bleeding from	20
Absorbent Cotton	90
Accident Cases	109
Acid, Burns	23
Adhesive Plaster	103
Arteries, The	9
Arterial Bleeding	13
Antiseptics	11
Artificial Respiration	36, 39, 61
Arm, broken	27
Ankle, broken	33
Back, broken	32
Bandages	117
Bandaging	56
Bleeding (Hemorrhage)	13
Blood, The	9
Blood Poisoning	11
Body, The	5
Boils—How to protect	89
Bones, The	6
Broken Bones (Fractures)	26
Bruises	34
Burns	23
Carrying Patients	63
Chest, Bleeding from	20
Cleanliness, Surgical	10
Carbuncles—How to protect	89
Chicken Pox	75
Collar Bone, broken	27
Cold in Head, relief of	102
Collapse (Shock)	21
Confinement	88
Contagious Diseases	73
Corns	120
Cotton, Absorbent	90
Court Plaster	100
Dental Floss	101
Diphtheria	74
Dislocations	24

INDEX—(Continued)

Disinfection	73 to 85
Drowning	38
Electric Shock	35
Eye—Foreign Body in	71
Fainting (Syncope)	22
First Aid Cabinets	111, 113
Fingers, Broken	28
Fractures (Broken Bones)	26
Foot, Broken or Crushed	33
Foreign Bodies	71
Formaldehyde Fumigation	78
Fumigation	78
Gauzes, Surgical	114 to 118
Germs—Germicides	11
Hand, Broken	33
Health Hints	72
Hemorrhage (Bleeding)	13
Insects—Insecticides	78
Infection, Blood Poisoning	11
Iodine Swabs	87
Jaw, broken	28
Jaw, dislocated	25
Knee-Cap, broken	33
Lightning	35
Liquid Court Plaster	100
Lungs, Bleeding from	20
Leg, broken	28
Maternity Packet	88
Medicated Plasters	97
Menthol Inhaler	102
Muscles, The	6
Mustard Plasters	95
Measles	73
Mumps	75
Nerves	10
Nosebleed	20
Nose, broken	30

INDEX—(Continued)

Plaster, Adhesive	103
Plaster, Court	100
Plasters, Medicated, Mustard	95 to 99
Poisoning	41
Poisons	43 to 53
Acetic Acid	43
Aconite	45
Alcohol	45
Ammonia	45
Antimony	45
Arsenic	46
Arsenious Acid	46
Atropine	46
Belladonna	46
Bichloride of Mercury	46
Blue Stone	46
Blue Vitriol	46
Camphor	46
Cantharides	46
Carbolic Acid	53
Cat Bites	46
Caustic Potash	46
Caustic Soda	47
Chloral	47
Chloral Hydrate	47
Chloroform	47
Chloroform Liniment	47
Cocaine	47
Codein	47
Copper Sulphate	48
Corrosive Sublimate	48
Creosote	48
Croton Oil	48
Digitalis	53
Dog Bites	48
Dog Button	48
Fowler's Solution	48
Fox Glove	48
Henbane	48

INDEX—(Continued)

Horse Bites	53
Hydrochloric Acid	44
Hydrocyanic Acid	44
Hyoseyamus	48
Iodine	49
Knock-out Drops	49
Laudanum	49
Lead	49
Lunar Caustic	49
Lye	49
Matches	49
Mercury	49
Mercury Bichloride	48
Monks Hood	49
Morphine	49
Muriatic Acid	44
Mushrooms	49
Nitrate of Silver	51
Nitric Acid	44
Nux Vomica	50
Oil Vitriol	50
Opium	50
Oxalic Acid	44
Paints	50
Paregoric	50
Paris Green	50
Phenol	50
Phosphorus	50
Potash	51
Ptomaine	51
Prussic Acid	44
Rat Poison	51
Silver Nitrate	51
Snake Bites	53
Soda	51
Spanish Fly	51
Strychnine	51
Sugar of Lead	51
Sulphate of Copper	51
Sulphuric Acid	44

INDEX—(Continued)

Tartar Emetic	51
Tincture Aconite	52
Tincture Belladonna	52
Tincture Iodine	52
Toadstools	52
Wolfsbane	52
Wood Alcohol	52
Zinc	52
Zinc Chloride	52
Zinc Sulphate	52
Ribs, broken	30
Roller Bandage	118
Scarlet Fever	73
Schaefer's Method—Artificial Respiration	37
Shock—(Collapse)	21
Shock—Electric	35
Skull, Fractured	32
Slings	27
Splints	29
Sprains	34
Sterilization	11
Stomach, Bleeding from	20
Sulphur Fumigation	82
Sunstroke—Heatstroke—"Heat Exhaustion"	54, 55
Sylvester Method—Artificial Respiration	39, 61
Syncope (Fainting)	22
Teeth, Care of	101
Tourniquet	15
Triangular Bandage	56
Tuberculosis	76
Vaccination—Protection of Sore	89
Varicose Veins—Bleeding from	21
Veins	9
Veins, Bleeding from	14
Whooping Cough	75
Wounds	12
Wrist, broken	33

